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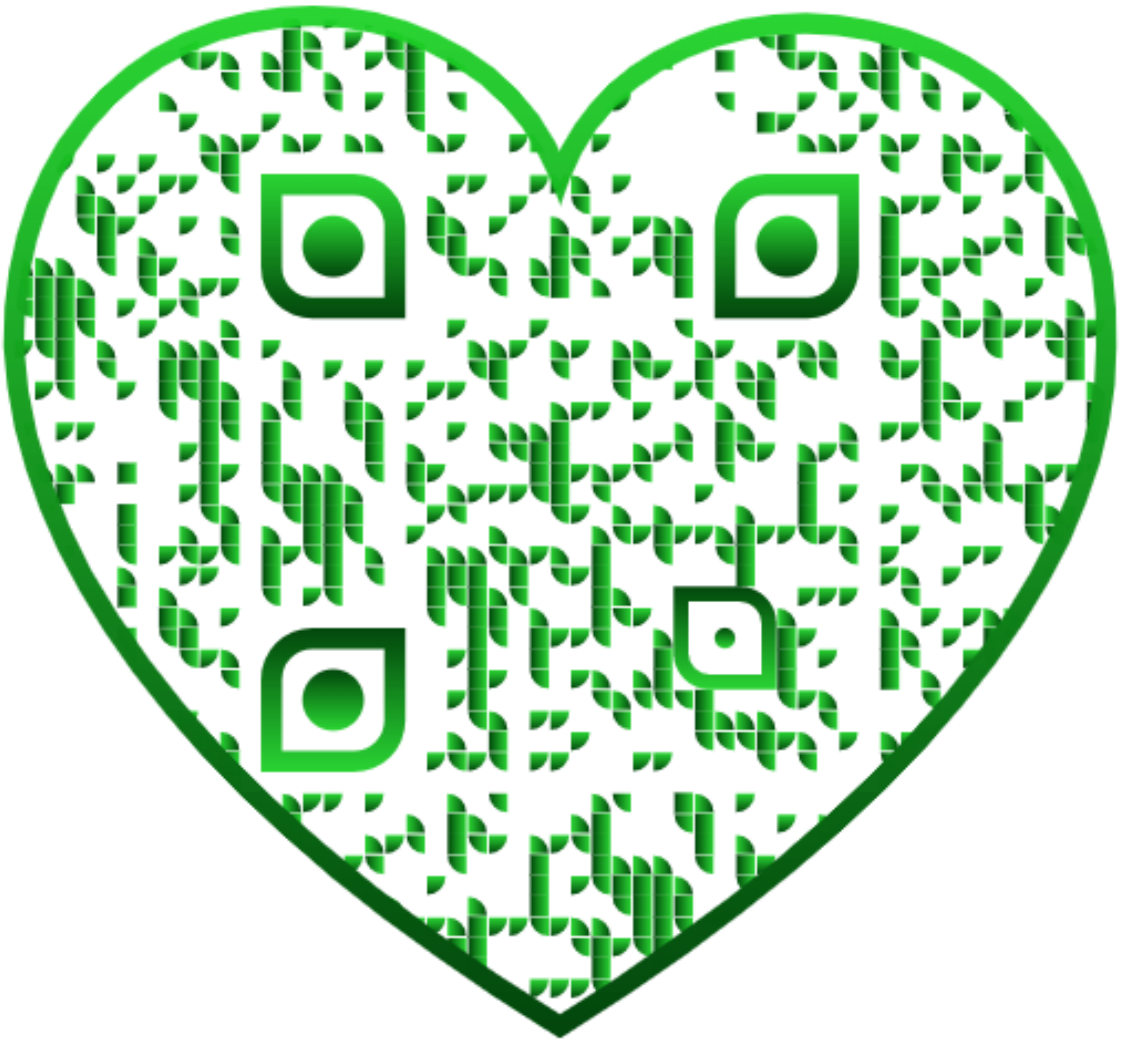

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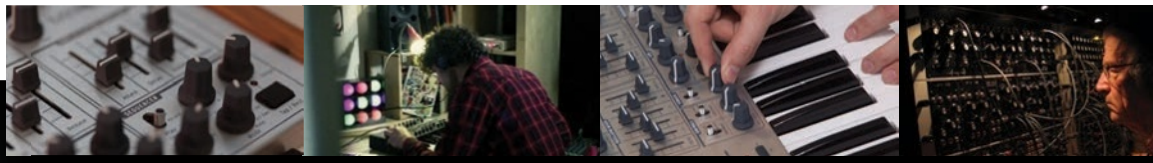

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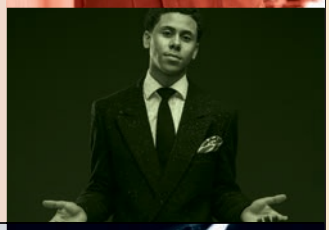

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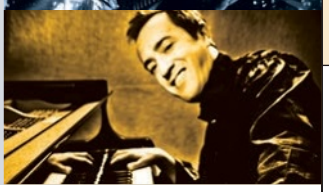

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Editor's Note

What's the difference between "libraries," "virtual instruments," and "soft synths"? You hear these terms used a lot, often interchangeably. Here are the definitions we at least *try* to stick to at *Keyboard*: A library is a set of sounds within some larger hardware or software ecosystem. These days, that's most often a soft sampler like Kontakt or UVI Workstation, but the term applies equally to aftermarket sound sets for hardware synths like the Korg Kronos and Yamaha Motif XF. A virtual instrument is a program or mobile app that makes sound on its own—though it may have its own sample engine baked in, as with EastWest's "Play" system. A soft synth is a virtual instrument that lets you tweak enough deep-level sound parameters to qualify as a "synthesizer" in the same sense we'd talk about hardware. (For the record I'd call a software B-3 or grand piano a virtual instrument, but not a soft *synth*.)

I could take up the next two pages talking about the gray areas, but for both our sakes, I'll take that discussion to the Keyboard Corner online. Whatever you call these tools, what matters is what they can do for your music. In this issue, we round up some of the best soundware for electronic music, and present full reviews of several outstanding software sound sources for modern soundtrack work. Next month, part 2 of our roundup will cover more orchestral and cinematic fare.

On another topic, I've gotten to spend more time with the Acoustic Image Flex amps reviewed last month by Richard Leiter, and have been steadily becoming ever more impressed with the sound quality they pack into such a lightweight package. Look for videos about them soon at keyboardmag.com/video and youtube.com/keyboardmag1. I also wanted to point out one goof in that review that was actually my editing bad: the statement that the Flex was "originally built for bass." While Acoustic Image started out as a bass amp *company*, the Flex is in fact a full-range compact P.A. system—not to mention one heck of a keyboard amp. See you next month!

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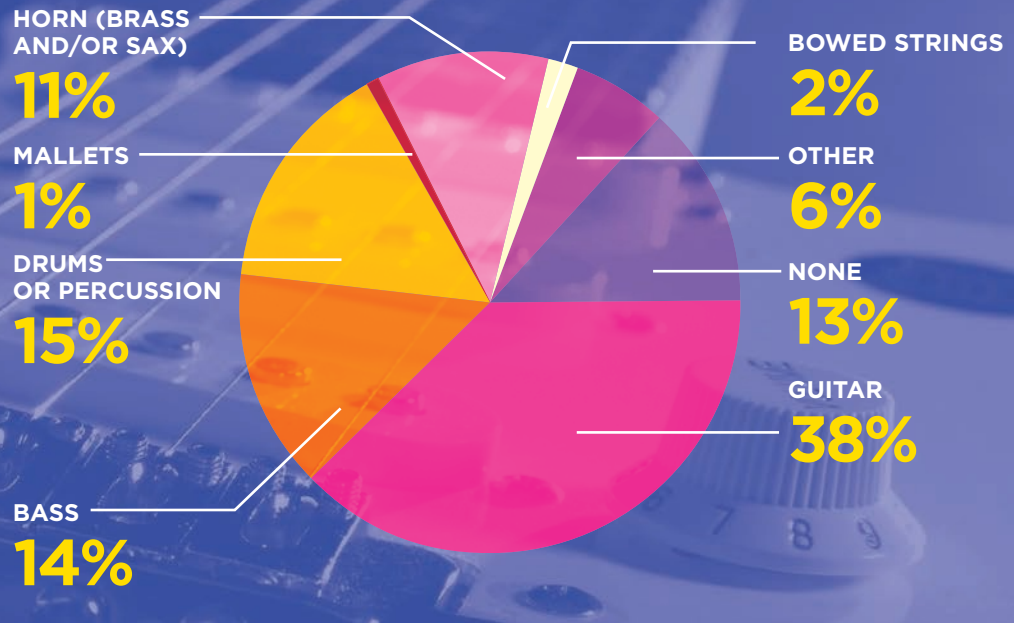
Stephen Fortner
Editor

THE Keyboard POLL

Q: WHAT INSTRUMENT DO YOU PLAY BESIDES KEYBOARDS?



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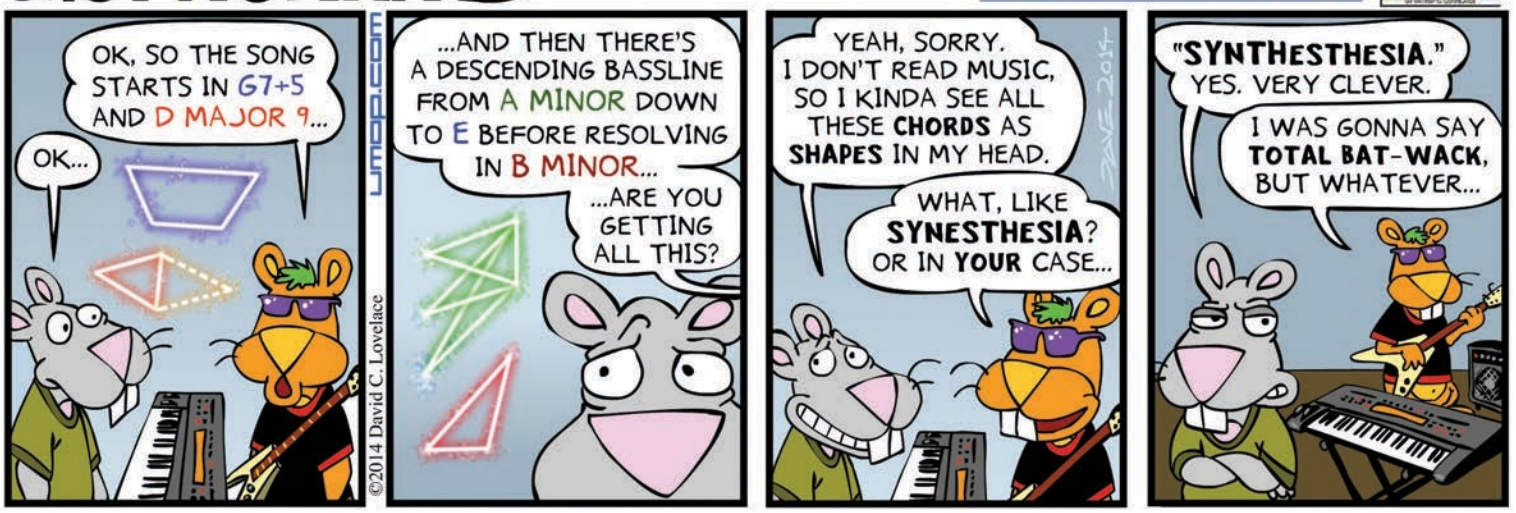

+ 30 YEARS AGO TODAY

Tony Kaye held forth in our July 1984 issue about the keyboard sounds and parts of **Yes**' now iconic album *90125*. His stage rig: an original Emulator sampler above a Korg BX3 organ, plus a stack of Yamaha DX7, Oberheim OB-Xa, and Kawai electric grand piano. **Jim Aikin** penned an extensive how-to on **transcribing music**, and guitarist **Pat Metheny** appeared in a two-page ad for New England Digital's **Synclavier II**. Reviews, on the other hand, were of gear that has since faded into obscurity: a CV-to-MIDI converter from a company called **Digi-Atom**, and the **Decillionix DX-1**. Not to be confused with Yamaha's huge FM synth, the latter was a sampler card and software for the **Apple II** computer.

Key Secrets That One Sound

In *The Art of Digital Music* (Backbeat Books, 2005), Spectrasonics mastermind Eric Persing (shown) told me, "Basically, every synthesizer can make at least one really good sound. So I don't ever say, 'Well, that instrument's just junk,' because invariably when I shut my mind to one approach, somebody will come along and do something with that instrument that's amazing." Have you found the killer sound in each of your instruments? Once you do, make it truly yours by inventing new ways to play it, via touch, phrasing, modulation, and effects. David Battino

My First Keyboard Compositions. Ramin Djawadi

Years before composing soundtracks for *Game of Thrones*, *Iron Man*, and *Pacific Rim*, composer Ramin Djawadi conjured melodies on a much simpler machine. "When I was four years old in Duisburg, Germany, I learned on my parents' two-manual Technics organ. You could play a chord while the organ created arpeggiated accompaniment." Even though the young Djawadi couldn't reach the organ's pedals, he learned a great deal by experimenting. "I would improvise and come up with melodies," he says, "and by the time I was six or seven, I would come up with something one day and come back to it the next. I didn't notate or record anything, I just made up little tunes and keep working on them." By the time he was a teenager, Djawadi had graduated to using the 16-track sequencer on his Korg O1W to layer sounds for live rock, funk, and classical performances— but he still traces his melody-making back to the Technics organ of his early childhood. "I loved playing with it, and that really was the first time I ever composed music," he says. For more on Djawadi, visit ramindjawadi.com. | Michael Gallant

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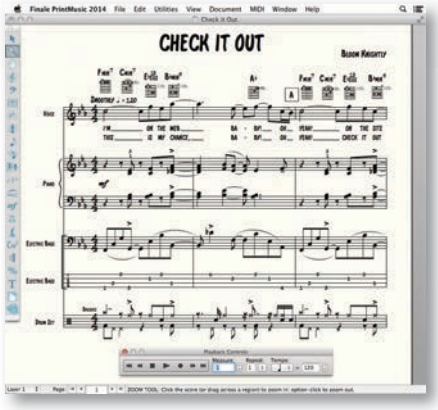

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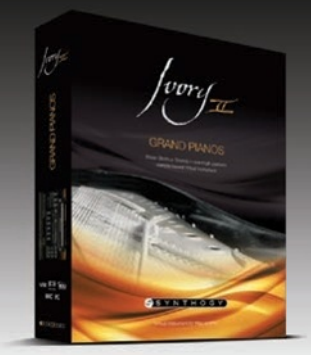

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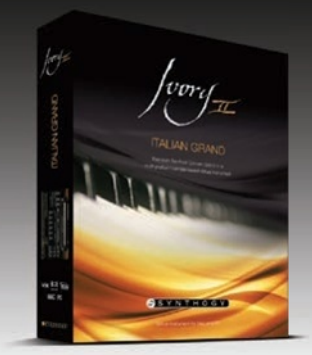

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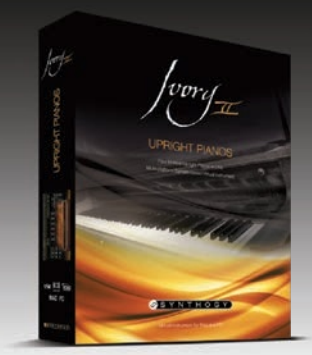

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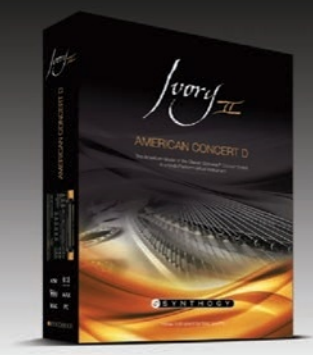
Upright Pianos



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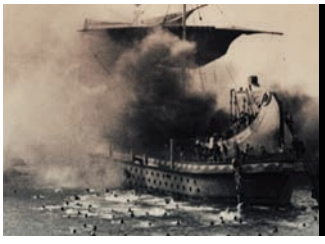
STEWART COPELAND ON WHY FILM COMPOSING MAKES YOU A BETTER MUSICIAN

BY JON REGEN

"I NEVER GOT THE GIFT OF PIANO-TUDE," JOKES POLICE DRUMMER STEWART Copeland during a recent trip to New York City. "I sit at a piano keyboard all day, every day, entering notes, and I can barely play 'Mary Had a Little Lamb.'"



That may be a bit modest, but even if Copeland isn't poised for a career as a concert pianist, his three-decade arc as a sought-after composer has never looked brighter. From his scores to films like *Rumble Fish*, *Talk Radio*, and *Wall Street*, to his forays into ballet, opera, and symphonic works, the legendary rocker continues to prove that he's just as potent away from the drum kit as he is behind it.

Now with the debut of his 400 plus-page score to the 1925 silent film *Ben Hur*, Copeland returns with a riveting multimedia experience. On a recent press stop in New York City, he sat down with me to talk about his continuing evolution as a musician and composer.

How did your new score to the 1925 *Ben Hur* film come about?

The music started as an arena show that I composed the music for. I ended up owning all of the music from it because the production went bust. Later, the show was purchased by a different impresario who's actually still running it today, but by that time, the music I composed and all of the copyrights had reverted back to me. I hate to see a good tune go to waste, so I thought, "What can I do with this?" So I thought of [organizing] a concert. Next I thought, "What would make the concert more exciting?" And my manager Derek Power said, "How about using the silent film?" To which I replied, "There's a *silent* film?" So I looked at the special edition package of the 1959 version of *Ben Hur* starring Charlton Heston, and one of the DVDs had the 1925 silent version of the movie on it. I checked it out, and it was colossal! The scale of it is just *huge*, with ships crashing into each other in flames and thousands of Italian extras leaping to their deaths to escape them. It was absolutely amazing, but it was two hours and 20 minutes long. So I ripped the DVD of the silent film and imported it into Final Cut Pro, cutting it down to 90 minutes and adding in the music I had already written for the arena show. Then I set about getting the rights from Warner Brothers to use that edit in our live concerts.

How long did that process take?

It took two years of working our way through the studio labyrinth to secure the rights. My manager had to basically *invent* a route to connect everybody involved. After we did, we got the 80-year-old print of the film, which took two weeks to "defrost." It hadn't seen the light of day since the 1960s, and it was in a format that no longer exists, running somewhere between 18 and 22 frames per second depending on who was cranking the machine at the time. I had to digitize the film at 24fps, so when I got the movie back and cut it to match my original musical cut, nothing matched. Things were running either longer or shorter. At this point I had 410 pages of score where every dot was matched to a frame of picture. So I had to recut every single shot of the movie to make the music fit correctly.

Did you adjust the music or the picture to make things fit?

I adjusted both. Originally, I assembled my first "slash cut" with orchestral music I recorded in Bratislava, overdubs in Istanbul, plus music recorded in Dusseldorf and Los Angeles. I had themes for particular scenes, and I tried to keep the integrity of my original cut. But when I got the movie back, I had to re-adjust everything so it worked and made sense.

What software did you use for composing? Score notation?

I compose in MOTU Digital Performer, but I use Avid Sibelius to get the score ready so the musicians can read it. Sibelius is hell to use as a composition platform. People do it, but it's insane. But [as a scoring platform], it's like somebody turning on the lights.

How has your studio situation evolved over the years? At one time you were composing with the Fairlight CMI.

Well, I've been following the technology. I started with the Fairlight and Kurzweil together, actually.

Do you still use the Fairlight?

No, but I've got three of them in storage! I can't bear to see them go, but obviously now they're irrelevant. My compositional career wouldn't have happened without them, though. The Fairlight made me as a symphonic composer possible. I used to joke, "One day they'll have

INSIDE THE SACRED GROVE

Copeland's studio is both film composing crucible and space for recording impromptu jams with fellow accomplished musicians. Here's the essential gear that makes it tick, in Copeland's own words.

Computer	Mac Pro as main recording machine. PCs for hosting libraries such as Vienna and Gigastudio.
Software	Composing: MOTU Digital Performer. Scoring: Avid Sibelius. Audio recording and routing: Avid Pro Tools. Video editing: Apple Final Cut Pro, but switching to Adobe Premier soon. Also, Adobe After Effects.
Master Controller	M-Audio ProKeys 88.
Other Keyboards	Akai LPK25. 1948 Hammond Model M with Leslie. 1935 Blüthner grand piano.
DAW Control Surface	An old Digidesign ProControl.
Audio interfaces	MOTU 2408 Mk. 3 (x3).
Main outboard gear	Racked Neve and Brent Averill mic preamps. True Systems Precision-8 mic preamp. Avalon AD-2022 converter. Other than that, audio processing is all software!
Studio monitors	Near: Alesis Monitor One. Far: PMC.
Microphones	Shure, mostly. I love the SM7B. There are a couple of big Neumanns, AKGs, and Sennheisers.
Instruments	The world's largest collection of the cheapest instruments money can buy—one or more of everything!

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Drawing on influences as diverse as hip-hop artists like Outkast and Madlib, rock and alt-rock artists like Sparklehorse and John Frusciante's solo recordings and '60s French pop music, electro-pop duo Phantogram, comprising childhood friends Josh Carter and Sarah Barthel, have transcended those roots with their latest release, *Voices*, while mounting riveting live shows that continue to grow their audience.

Despite the intensity and lyrical darkness of much of their material, offstage they are self-described as "kind of goofy." As Barthel says, "We just like to mess around and have fun and laugh a lot." The seriousness pops out, though, when they start to talk or think about their music. "Whenever we switch over to music, [even] if we're just talking about [it], we switch completely over, to the point where people are [asking], 'Are you guys clinically depressed or something?' It's so interesting, because we don't even notice it—like we don't even realize that it's happening."

Barthel, who handles the bulk of the keyboard playing live, is overjoyed at having been able to work with Moog instruments, especially the Moog Voyager. "It's just this warmth and gritty thickness that you can find with Moog," she says. "We've always wanted to use them. I think it's a huge element in our sound. I mean, I'm a super bass head, I'm always like yeah, more bass. Let's feel it. I just love it so much. And Moog is, 'it.'"

See the whole interview and the gear at guitarcenter.com.

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this in my watch!" I totally got that wrong. It's not in my watch—it's in my iPhone! I carried on using Kurzweils for awhile until I started using the M-Audio ProKeys 88 to control software instruments. I had been looking for the longest keyboard with the fewest buttons, because I don't need its internal sounds. The ProKeys is an excellent machine. I also have an Akai LPK25 that I use for traveling and to send patch changes.

What are your main instrument libraries for composing?

Vienna Symphonic Library and [the instruments included with] Sibelius. The score to *Ben Hur* is huge, so I often have to work things out in General MIDI because it's just too large to drive other sample libraries. That's a bit of a drag. I know the music, so I don't *need* the ear candy of huge sample libraries all the time I'm working, but it sure would be nice to hear it that way. There really are two completely different missions: One is to make music sound great coming out of the speakers, and you need something like Vienna or Hans Zimmer's library for that. That's actually a relatively easy job. The other is to get the music onto the *page* so that it reads well and you communicate nuances to the orchestra musicians who will be playing it. That's the really tricky part. It takes ten times more effort and concentration to do that.

Where did your fascination with film scoring come from?

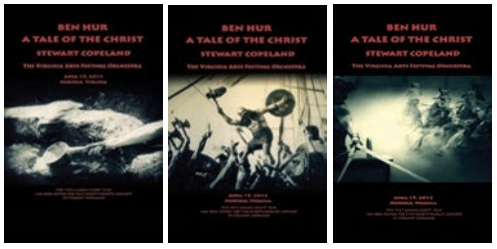
From a call I got from Francis Ford Coppola to score the movie *Rumble Fish* in 1983. That'll do it!

It was never on your musical radar before that?

No, not really. I always had orchestral music going around in my head, but I never really gave it much time, because it wasn't who I was as a performer. I listened to it, but the idea of marrying my rock drum world with orchestral music felt pompous to me. Film composing is what actually brought me back to the orchestra. In fact, I hold that the film composer has the widest skill set of any musician.

Why is that?

Because the craft of film composing requires that ultimately every form of music, ethnicity, time period, and emotional state be represented. You have to work with every known form of not only music, but culture as well. There's also the *specificity* of it. When somebody like [British composer] Mark Anthony Turnage writes a concerto, he goes where his instincts take him. He's an artist with a capital "A," and he never has to step outside of those instincts. But a film composer has to go exactly to the specific emotion that each situation requires—to happy, or sad, or happy/sad with a tinge of whimsy,



"I hold that the film composer has the widest skill set of any musician."

and so forth. It's not just, "I have a nice tune and I'll follow it wherever it leads." The film composer has to go to complex yet precise emotional places constantly. So he or she learns the skill set of how to get there, and what music takes you there.

Your scores have so many different sonic elements in them. Did you consciously study different kinds of ethnic music?

I never studied ethnic music, but I *have* studied orchestration. I actually worked with a professor on it. Re-creating different types of music seems to come instinctively to me. I majored in music in college, but the deeper part of orchestration, as opposed to composition, is something I have studied in depth. Understanding how to communicate nuances in the score to the musicians playing it, and how to *balance* an orchestra on the scoring stage requires you to put those kinds of instructions on the page. I actually had a professor come over and beat me up until I started to understand the craft. I would write a score and he would send it back just covered in red ink. He never suggested what I should do; he just showed me what the problems were, and I had to figure out how to fix them on my own.

I also learned how to balance the different sections in the orchestra by going directly to the master scores. In fact, right under my studio desk, I have the score for Stravinsky's *The Rite of Spring*, which I pull out for reference. I'm not trying to write that piece of music per se, but I want those *textures*. So I'll look and see, "Oh, he's got the contrabassoon down *there*." I sort of have an idea of how Stravinsky builds his sound palate. But Ravel and Debussy? With them, what sounds like just beautiful waves of sound has all *kinds* of stuff going on under the hood! It's like a sonic wash, but it's percussive with little grains of sand and texture in it. And so you check the score and see exactly what's going on. That's how Ravel himself learned—by studying the scores of masters.

So it's those kinds of textures that you seek out and try to integrate into your own scores.

Exactly. I'm stealing the *textures*, because it's the only way to learn. You just don't get enough podium time as a composer to learn by trial and error. With rock 'n' roll, I can pick up a guitar and try things out live. But I don't get the chance to see if an orchestral idea works without assembling an orchestra. So there's no way around studying the scores.

I once read an interview where you said all you needed to compose were "ivories and faders." Are those still your only requirements?

Well, I also need an application. I'm a Digital Performer guy, but I gather Logic and the rest of them all pretty much do the same thing. By now, though, DP is basically invisible to me; my fingers just know where to go. I also recently discovered a new application called Streamers that lets you integrate visual cues for film scores easily. In olden days, they would actually drill holes into the celluloid to give the composer cues. Streamers is a modern-day version of that same principle.

Your work crosses many artistic divides, from rock drumming and orchestral composition, to film editing and direction. Do you find it easy to pick up new creative disciplines?

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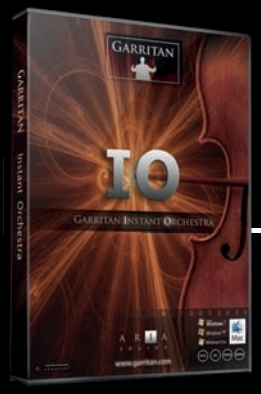

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I love to tinker around. I'm an app geek. Most composers and editors who are younger than me have their own fingers on the computer keyboard when they're composing. It's no big deal to them. But no one from my generation does. They pace in the back of the room and their workday doesn't begin until their engineer arrives. And when the engineer goes home, they're done for the day. My engineer of 30 years, Jeff Seitz, started out as a drum tech. We both learned studio technology together and went through everything from two-inch analog tape, Mitsubishi digital, PCM, the Fairlight, and the advent of Mac-based sequencing and recording. But our relationship is 100 percent social now. He's one of my closest friends, but we don't work together anymore. I'm a one-man show. [*Laughs*.]

You don't like having someone at the console with you while you're composing?

I don't *need* to. And he doesn't particularly like staring at the wall!

Are any other musical projects keeping you inspired currently?

I have a series of videos up on YouTube called "Live at the Sacred Grove," which was inspired by the realization that when I'm not composing for film, I still have a studio full of instruments and a trunk full of microphones. So I wired my studio up and miked up all the drums, amplifiers, the Hammond organ and Leslie speaker, everything! Every square foot of my studio is wired up and close-miked. Plus, I have six cameras with six hours of memory in each of them. So the whole studio is ready to rock.

I invite my friends over and I tell them the cameras are on. There's no camera operator or sound engineer—we're just drinking tequila and doing what musicians do. We have parties and we jam. There's no "Can you give me a level?" kind of studio experience. It's all music. So for instance, the guys from Pearl Jam come over to the Sacred Grove. We play all night and then they leave. But I recorded everything!

So what are you doing with the material?

Well, I can hand the musicians other instruments while we're listening to the playback of what we just jammed to. So, for example, we'll overdub ideas for brass parts, singing them through the mouthpiece and just having fun. Then they leave and I can "Foley in" those parts. I can loop a particular part in Digital Performer until I find what I'm looking for, and then I cut up the 15-minute jam down to seven minutes and I

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start overdubbing different parts, like Tower of Power-style horns, for example. I've had Tommy Lang, Ben Harper, Stanley Clarke, Jeff Lynne, Snoop Dogg, Taylor Hawkins, Neil Peart, Matt Stone, and many others. It's not only about the live jams, it's about the inception of an idea. They're literally making it up while they're there. It's like [Daryl Hall's TV show] *Live From Daryl's House*, but different, because these musicians aren't promoting their new song or new album. It's just for having fun.

Are there any plans for the videos besides just letting them be seen?

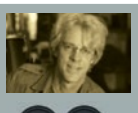
No. I put them up for all to enjoy. I'd love to make an album from those sessions—not for commercial exploitation, but just so people can listen to it in their cars.

As a guy who has worked in seemingly every area of the musical arts, what keeps you hungry and motivated?

Well, I do like "the big mission." With my 60 years of making music, I feel that it's my responsibility to what I've learned to keep challenging myself and go to places that only a person finally equipped with my experiences can go. I like making these Sacred Grove videos because they're fun. They're free. I do them to give back. I feel that I've been amply rewarded for my music. Not only have I paid my dues, I've earned my due. I really feel that way, and I have no desire to extract more money out of my fans. All I want is for them to enjoy my music. That's why I do things and why I'm talking to you. I just want more people to hear it.

What advice do you have for aspiring film composers today?

I would tell them to "eat their vegetables," meaning study your orchestration, because that's the one skill that the kid next to you with his laptop and his copy of Reason can't compete with. Learn about the general theory and use of the orchestra, because the biggest composers working today know it. No one is going to steal James Horner's job, but the average electronic composer has to be scared for his or her job these days. So know your orchestration! ♫


Stewart Copeland Discusses *Ben Hur*

Stewart Copeland – *Ben Hur* clip

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Reuben James

BRITISH SOUL INVASION

BY JON REGEN

TWENTY-ONE-YEAR-OLD KEYBOARDIST REUBEN JAMES HAS BEEN SHAKING up the musical world both with U.K. retro-soul phenom Sam Smith and with his own acclaimed groups. He's our "Talent Scout" artist to watch this month. Keep up with him at twitter.com/itsreubenjames.

HOMETOWN: Birmingham, U.K.

MUSICAL TRAINING: Two years at Trinity College of Music.

FIRST GIGS: Ruby Turner, Yasmin, Abram Wilson 4tet.

MUSICAL INFLUENCES: Michael Jackson, Stevie Wonder, Donny Hathaway, Errol Garner, D'Angelo, All Lovers Rock, Ahmad Jamal, Miles Davis, and more.

WHAT I'M LISTENING TO RIGHT NOW: Gretchen Parlato's *The Lost and Found*; Grant Green with Sonny Clarke, *The Complete Quartets*; Raphael Saadiq, *Instant Vintage*; Nat "King" Cole, *After Midnight*; Wynton Marsalis, *Black Codes (From the Underground)*.

INSTRUMENTS PLAYED: Piano and various stage keyboards (see below).

MY BIG BREAK: Playing with Ruby Turner. This was a learning curve, for me to play for the biggest voice of soul music in the U.K. Also, playing with a group called The Funk on Me, supporting B.B. King in Europe when I was 16. I then started touring on the jazz scene with the late, great Abram Wilson, the Clark Tracey Quintet, Jay Phelps, and Jean Toussaint, and regularly played the late show at Ronnie Scott's jazz club. Later, I started playing for Sam Smith and the project has really blown up. It should be a very busy year. We just played on *Saturday Night Live* in America.

LATEST ALBUM: Playing on Sam Smith's debut record *In the Lonely Hour*, released in May of this year.

FAVORITE KEYBOARD GEAR: I've been using the Nord Stage 2 and Electro 4D around Europe and the U.S. for the Sam Smith tour. I'm switching to a full Korg setup for the rest of the year.

WHAT'S NEXT: I'll be playing the Love Supreme Jazz Festival in the U.K. with my trio, then off on a European tour with Sam Smith. I'm also currently doing a lot of songwriting and collaboration, trying to work on my own material.

ADVICE: Never get comfortable or lazy—those are the easiest things to do. Play as many gigs as possible with as many people as possible, and "woodshed" whenever you get the chance, as finding the time gets harder when you're on the road. Learn to play all your tunes in all 12 keys! Transcribe from the most prolific players of all time that have changed your instrument, like Errol Garner, Ahmad Jamal, and Herbie Hancock. Only practice things that you *can't* do—there's no need to feed the ego. Be humble and put the time in at the piano or you will get found out! There are no limits.

Sam Smith with Reuben James: "Stay With Me"

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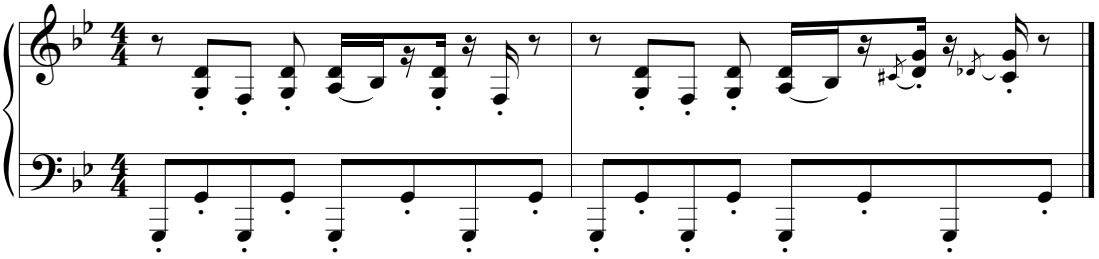
BRIAN FOX

5 WAYS TO PLAY LIKE John Paul Jones

BY MATT BECK

JOHN PAUL JONES IS UNIVERSALLY RECOGNIZED AS THE BASS PLAYER IN LEGENDARY ROCK GROUP LED ZEPPELIN, but he was responsible for many other duties as well, most notably for playing keyboards. In fact, some of Led Zeppelin's most identifiable and iconic moments were due to John Paul Jones' inventive and eclectic keyboard parts. Here are five ways to get inside his many different keyboard styles.

Ex. 1.

1. Clavinet Comping

Taking a cue from the soul, R&B, and funk bands of the day, John Paul Jones found a way to work funky Clav parts into the Zeppelin sound, infusing them with unabashed arena-rock flare. **Ex. 1** is in the style of Jones' Clav riff to "Trampled Under Foot."

Listening List: Essential John Paul Jones Albums

LED ZEPPELIN
In Through the Out Door

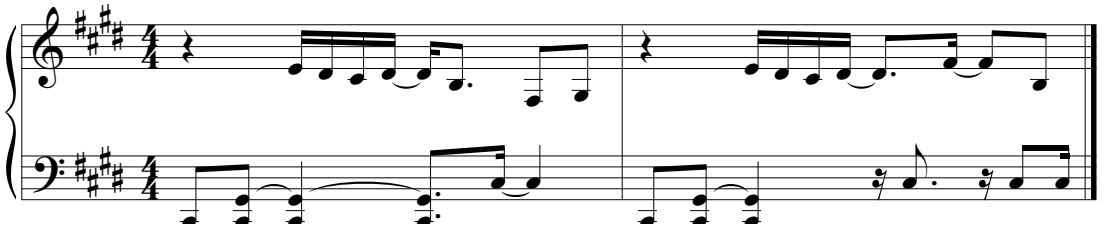
LED ZEPPELIN
Physical Graffiti

LED ZEPPELIN
Houses of the Holy

JOHN PAUL JONES
Zooma

THEM CROOKED VULTURES
Them Crooked Vultures

Ex. 2.



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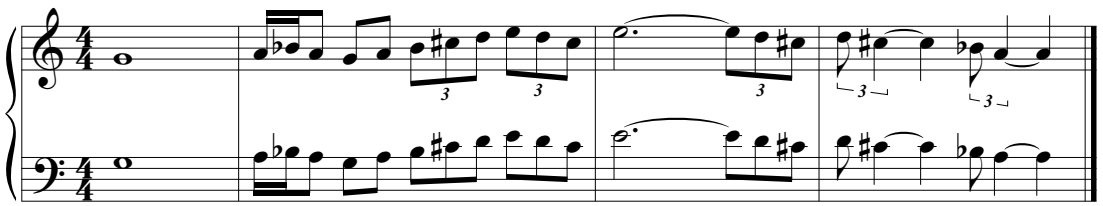

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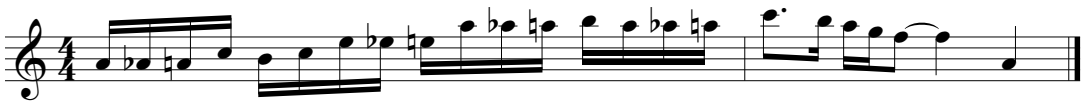
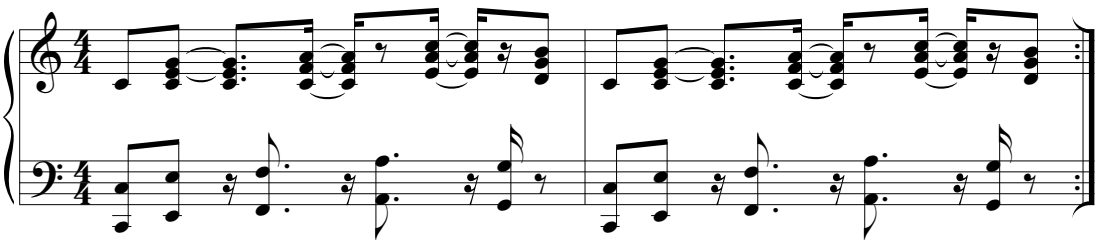

Ex. 5.



2. Effected EP

Ex. 2 is in the style of Jones' intro to the song "No Quarter." On record, Jones ran a Hohner Electra Piano (not to be confused with the RMI keyboard of the same name) through an EMS VCS3 synth and modulated the filter with a sine wave LFO. The result is a unique and psychedelic sound that works perfectly for the song.

3. Mellotron Mayhem

A keyboard instrument popular during Led Zeppelin's era was the Mellotron, which derived its sounds from tape loops of real instruments. This gave keyboardists the ability to have literally any recorded sound at their fingertips. Most of the time, the Mellotron was used for emulating string, flute, or horn sections. Jones employed it on songs like "The Rain Song" and "Kashmir." **Ex. 3** is in the style of what Jones played on the bridge of "Kashmir." An interesting note is that Jones arranged real strings and Mellotron together for the recording.

4. Synth Sense

Always at the cutting edge of keyboard technology, Jones used the mammoth Yamaha GX-1 (also a favorite synth of Keith Emerson) to great effect on the *In Through the Out Door* album, most notably on the track "All My Love," where he married classical, rock and prog sonorities into a majestic sound all his own. **Ex. 4** is in the style of Jones' solo break on that song.

5. Roughhouse Piano

Jones wasn't scared to "bring it on home" when the moment called for it. A perfect example is his piano solo break on "Fool In the Rain," which **Ex. 5** is a tribute to. Jones plays that passage with flare and reckless abandon, while also showing great ability for syncopation and feel. It is truly one of the greatest keyboard moments from the Led Zeppelin catalogue.

LESLIE DELA VEGA

"Not many people are aware that **John Paul Jones** was already an experienced studio musician before joining Led Zeppelin, and as such, knew a lot about crafting compelling keyboard sounds," says **Matt Beck**, who plays keyboards and guitar with artists like Matchbox Twenty, Rob Thomas, and Rod Stewart. He also recently joined the musical cast of "Beautiful," the new Broadway musical about the legendary Carole King. Follow him on Twitter @mattymay.

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Play-along audio examples.

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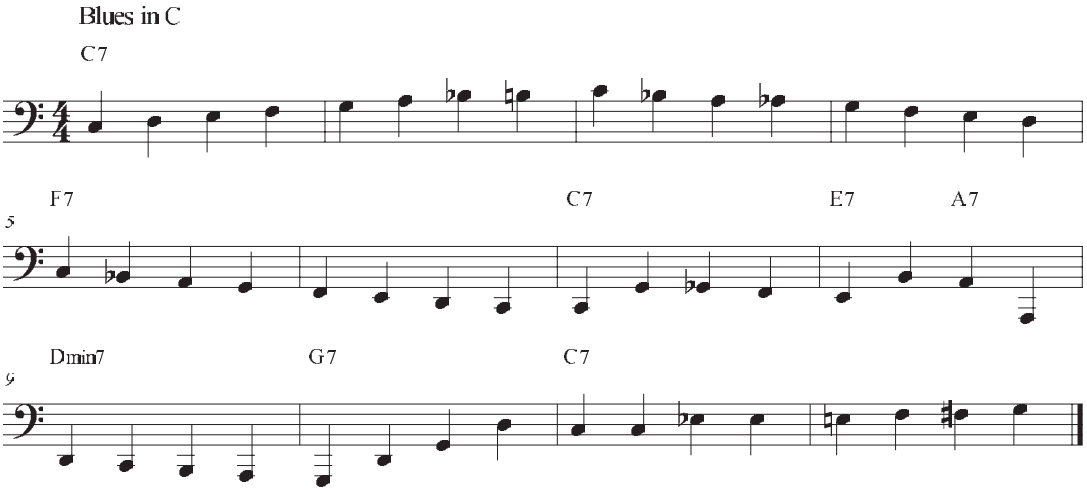
5 WAYS TO Think Like a Bass Player

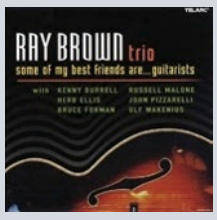
BY GEOFFREY KEEZER

AS KEYBOARDISTS, WE OFTEN HAVE TO PLAY LEFT-HAND bass, whether in an organ trio or at a casual cover gig. The best way to internalize the logic behind great bass lines is to study actual lines played by great bassists. In this lesson, we'll focus specifically on the style of the legendary jazz bassist Ray Brown, with whom I had the pleasure of playing with for three years from 1997 through 1999. Here are five ways to build better bass lines. [*Also see our tutorial on creating better sampled bass guitar* sounds *on page 36. —Ed.*]

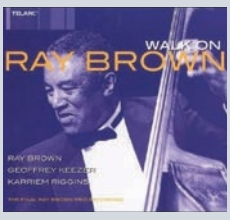
Ex. 1.

1. Use a Wider Note Range

Ray Brown utilized the full range of his bass when walking bass lines. On the piano, the low end corresponds to the lowest *E* on the keyboard, and high notes extend to well above middle *C*. **Ex. 1** is much like a blues in the key of *C* we often played together. Notice how Ray starts in a relatively high range and walks upward, then reverses direction, culminating in a low *G* in bar 10. Most keyboardists use a much narrower range for bass lines, so stretch your boundaries!

Listening List: Ray Brown with Geoffrey Keezer



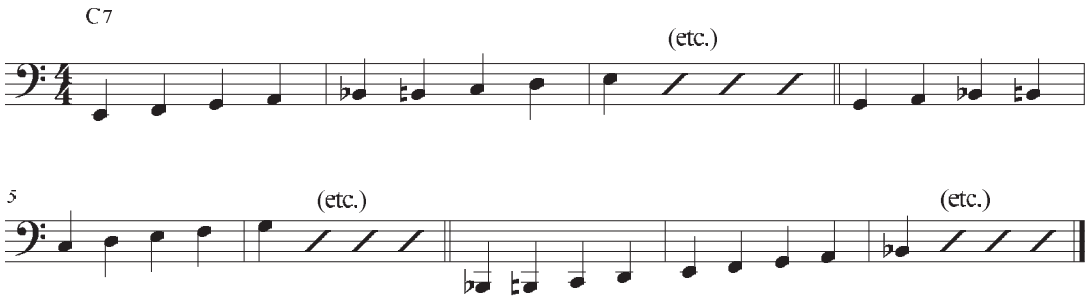
Some of My Best Friends Are . . . Guitarists



Walk On

Live At Starbucks

Christmas Songs With the Ray Brown Trio

Ex. 2.

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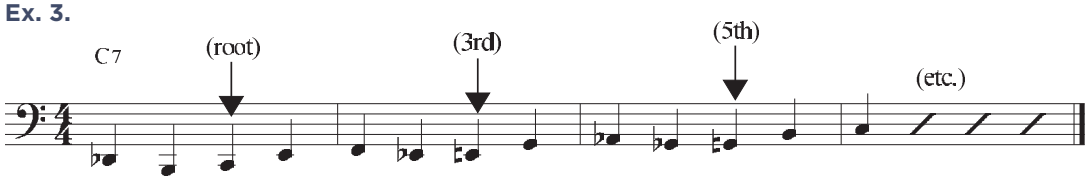

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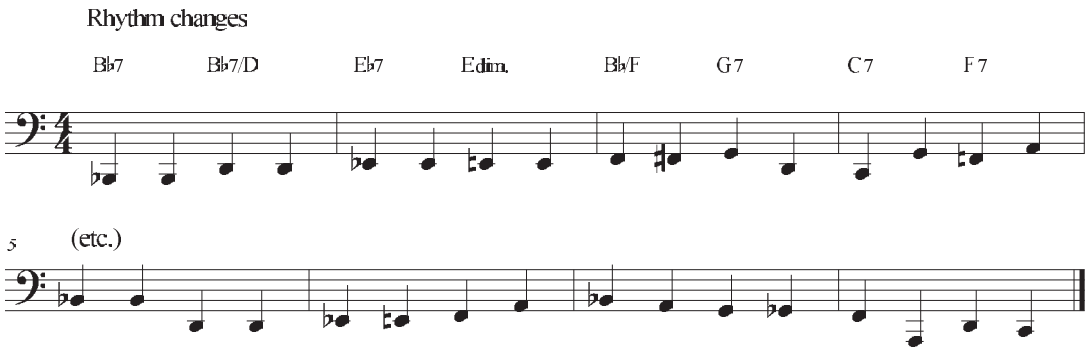
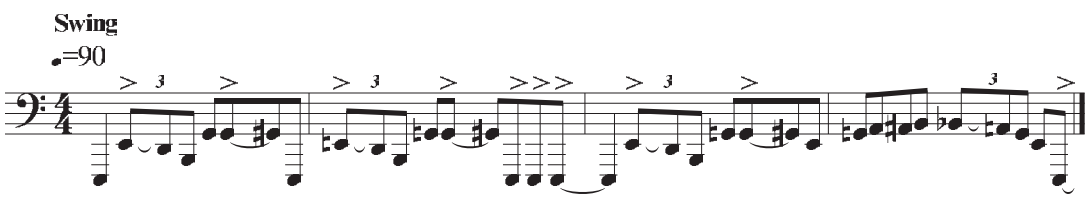

Ex. 5.



2. You Don't Have to Play Roots on Beat 1

In bar 5 of Ex. 1, the chord is an *F7* but Ray starts on *C*, which is the fifth of the chord. This is because it's the continuation of a descending melodic line that starts in bar 3. **Ex. 2** shows a few ways you can walk on a *C7* chord without starting on the root. Using a strong chord tone (like the third, fifth, or seventh) on beat 1 of each bar helps to keep the harmony clear.

3. Chromaticism Is Okay, Even Down Low

In **Ex. 3**, the bass "surrounds" the root, third, and fifth by starting a half-step above, then going a half-step below the strong chord tone. This creates a snaky sounding bass line that imparts tension and melodic interest.

4. Mix It Up

Ex. 4 shows Ray walking on "I Got Rhythm"-style chord changes. Notice how he alternates between static notes (bars 1, 2, and 5), and moving lines (like bars 3, 4, and 6 through 8). Variety is the key. It's even okay to repeat notes.

5. Let the Bass Line Be the Melody

Sometimes, the bass line itself is the hook or the most important melodic idea in the tune. **Ex. 5** is in the style of Ray's tune "The Real Blues," a piece we played every night. Though one can't literally bend notes on an acoustic piano, try to emulate the bluesy style and feeling of a bassist sliding up the string from the *G* natural to *G*♯ when playing this excerpt. In addition, be conscious of placing accents so the notes really pop.

"Well-crafted bass lines should not only keep time and outline chord changes, they should contain all the beauty and motion of a good melody," says keyboardist and composer **Geoffrey Keezer**, who joined Art Blakey's Jazz Messengers at age 18 and has since gone on to work with Sting, Diana Krall, and Wayne Shorter. Keezer's latest release is a solo piano recording entitled *Heart of the Piano.* He offers online piano lessons at KeezersPianoLessons.com.

Keezer demonstrates melodic bass lines.

Play-along audio examples.

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THE ART OF SYNTH SOLOING

Adam Holzman on Jan Hammer

BY JERRY KOVARSKY

ADAM HOLZMAN IS ONE OF THE MASTERS OF LEAD SYNTH SOLOING, AND best embodies the techniques and vocabulary pioneered by Jan Hammer. We had a deep conversation on the art of synth soloing, and he delivered me a burning audio clip demonstrating the concepts we talked about, while showing off his amazing chops. He was most recently profiled in our September 2013 issue, where you can read more about his gear and current gig with the Steven Wilson Band.

Basic Sound

As a starting point for a straight lead sound, Adam keeps things pretty standard. He'll mix a sawtooth oscillator with a pulse oscillator at the same octave, with very subtle detuning. The filter is open about 75 percent with little to no resonance or envelope depth, and he uses a basic fast attack, full sustain, fast release amp envelope (see Figure 1). He'll map filter cutoff to a foot pedal. He never uses reverb, preferring either a tight slapback echo, or a longer echo with regeneration dialed back to support the sound, not overwhelm it.

Hearing him play a few years ago with the Mahavishnu Project (with Jan Hammer as a special guest), I was taken with his sync lead sounds as well. He explained that he prefers no automated sweep of the modulating oscillator's pitch, which is often done via an envelope or LFO (see my September through November 2012 columns for more on sync leads). He likes to set it to a nice interval to accentuate the harmonics, and will sweep that pitch with a knob, slider, or pedal. But on it's own it stays static—no "Let's Go" Cars presets for him!

Pitch-Bend

Adam has a strong opinion on pitch-bend range. He feels it's foolish to set the range to only a whole-step, which is the common default. "That forces you to move the controller very far to get the most commonly used bend," he points out. "It's not smart ergonomically, all that wasted motion." Adam makes use of bends of a minor and even major third, so he sets the wheel range to a perfect fourth. I found his "wasted motion" argument compelling. [*For more on pitch-bend, see Jerry's columns from January through March 2012 —Ed.*]

Fig. 1. Adam Holzman's Minimoog lead template, recreated using Arturia MiniV.

Lessons from Jan

"Jan Hammer developed the techniques and vocabulary that most of us still draw from in our playing. No one has since come along and become 'the next thing' in approaching the synthesizer as a lead solo vehicle," states Holzman. So what lessons has Adam learned from the master?

"Jan's approach to pitch-bend is masterful. He mixes upward and downward bends, scoops and fall-offs; using half-steps, whole-steps, and minor and major thirds. But the biggest point I'd make is that the bend is always a natural part of the phrase he plays. Too often I hear keyboardists play a complete musical thought, and *then* add a little pitch-bend wiggling as an afterthought. I hate that! Learn to incorporate bends as an intentional part of the line, and practice until it becomes second nature."

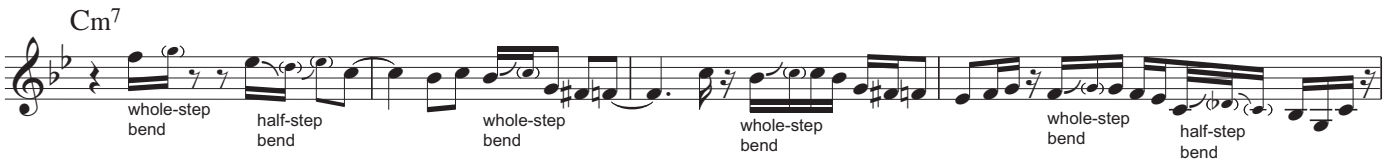
Finally, Jan didn't always just run up and down the keyboard. "He stated small motifs based on a few notes, and then mixed up the order of those notes, and used rhythmic displacement to develop those ideas in compelling ways," states Holzman. "The idea might be a simple pentatonic or blues lick, but often he'd superimpose another tonality over the key center. I like to do this as well, so for example, I might move into *F* minor or *G* minor over a *Cm7*, or move to *Db* major for a little bit, and then come back home."

Adam Schools Us

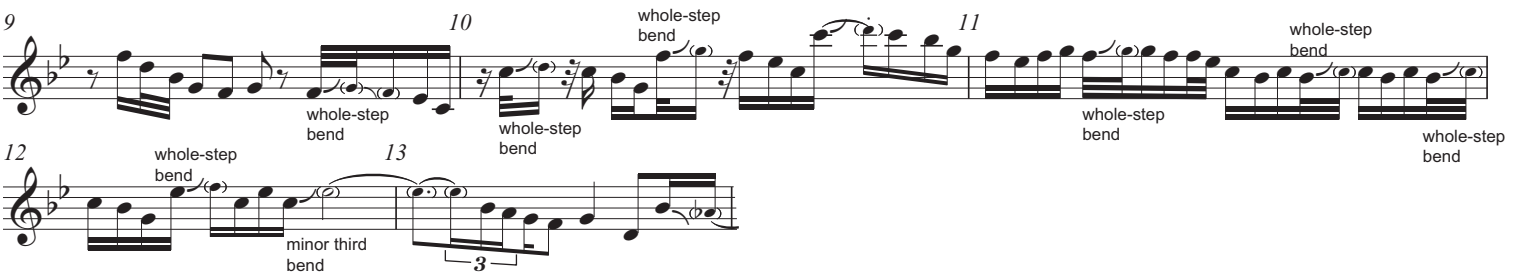
Adam recorded a short example (named "Kihei Stomp" after where I live in Hawaii), which you can hear online. A slowed-down version is also posted along with the full transcription, so you can learn to play it.

Notes that are bent are shown in regular size with a graphic to show the bend direction, and the bend interval note is smaller (and in parentheses) so you know which pitch to get to.

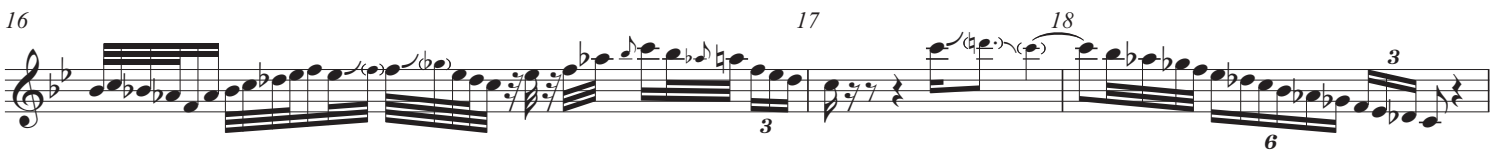
Bars 1 through 4 (**Ex. 1**) feature some blues scale licks, and Adam does some tasty whole-step upward bends, as well as a half-step down bend on beats 3 and 4 of bar 1. Notice in bars 2 and 4 how he uses the classic fusion lick of repeating the same note, one reached by a bend, and the other played open.

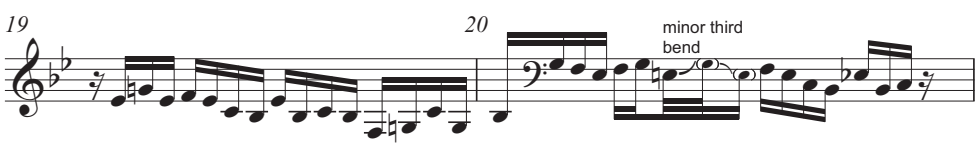
Ex. 1.

Ex. 2 shows more expert pitch-bending; in bar 10 the upward bends are used as a type of note release. This is a common move that guitarists make, and is similar to an effect that brass players use called a "doit," where the player moves the pitch upward through a rapid gliss on the release of a phrase. At the end of bar 12 into bar 13 Adam employs a soulful upward bend of a minor third and hangs on it, before finishing the phrase. Very tasty!

Ex. 2.

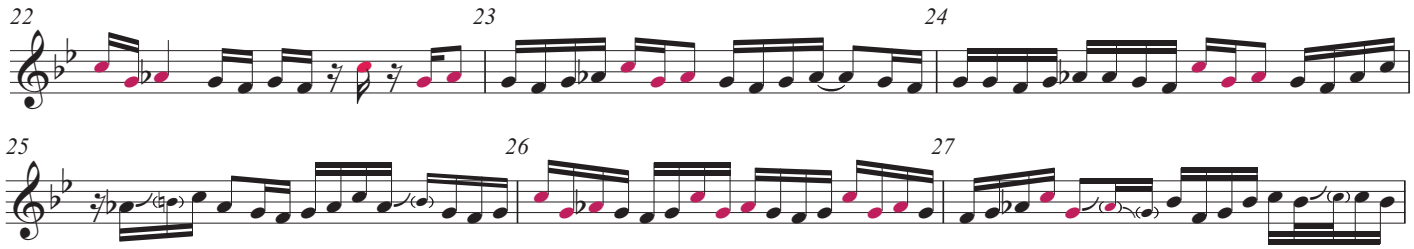


In **Ex. 3** we see the technique of superimposing another harmonic center over the chord. In bar 16 Adam is playing in *F* minor, and then finishes the phrase in bar 18 with a fast, descending *D*♭ major scale run. This adds interesting color to a one-chord jam.

Ex. 3.

Ex. 4 shows a riff that immediately struck my ears as being like classic Jan Hammer. In bar 20 Holzman uses the major third over the minor seventh chord (along with another minor third bend), as Hammer has done on many recordings. Use the following scale: *C*, *E*, *F*, *G*, and *B*♭, played over the *Cmin7* chord (transposed appropriately if you're in a different key). This scale is sometimes called the Mixolydian pentatonic, the dominant pentatonic, or even the "Jan Hammer scale."

Ex. 4.

In **Ex. 5** we see more *F* minor superimposed over the *Cmin7*, and now Adam explores a repeating motif (*C*, *G*, and *A♭*, as shown by the red notes), twisting and turning the phrase around, and using the previously mentioned rhythmic displacement to wring a lot of variety from just a few note choices.

Ex. 5.



Practice Tips

Thanks to Adam Holzman for sharing so much with us all. Just playing these licks (and the whole solo) could keep you busy for weeks. Break it down into smaller segments, playing along with the slower speed audio file first before bringing the tempo up. The rhythmic notation is pretty difficult, but by first listening to Adam play it you'll get the hang of it. Pay close attention to the bends—not all of them are perfectly in tune, and that's intentional. That's not a license to be sloppy, as when it's *not* intentional, you should be trying to nail those bends! ♫

SOUNDCLOUD

- Get the full transcription of "Kihei Stomp" along with normal and slowed-down audio files.
- Visit Adam online at adamholzman.com.

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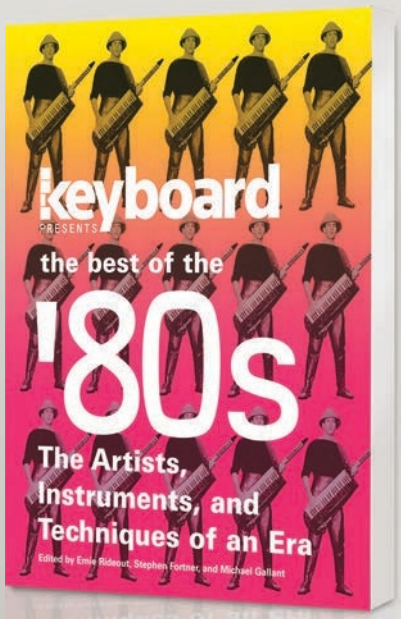

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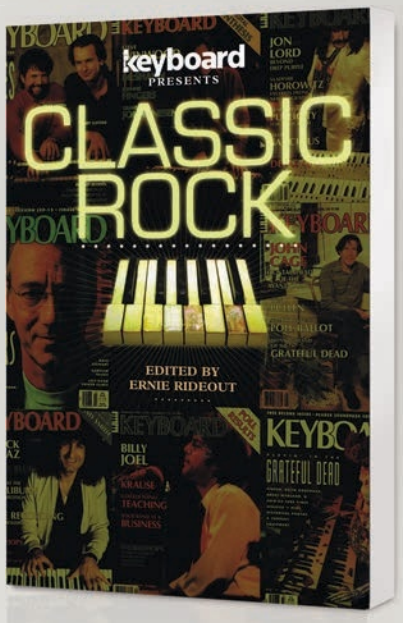

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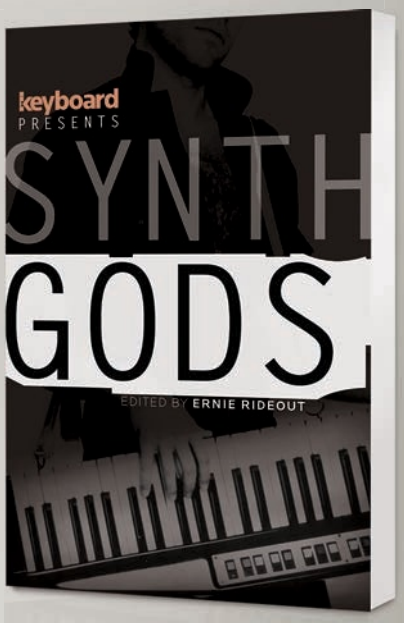

SYNTH GODS

Culled from the pages of *Keyboard* magazine, this book spotlights artists who did much more than just play synthesizers: they changed the course of music history and inspired generations. Featuring in-depth profiles of Jan Hammer, Wendy Carlos, Rick Wakeman, Brian Eno, and others, this book delves into how these new, untested boxes of circuitry captured the imagination of so many legendary artists.

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Fig. 1. Vir2 Basis is one of today's leading virtual bass guitar instruments, but a few MIDI and processing moves will make it sound even more realistic.

Lay Down the Down Low

CREATING REALISTIC ELECTRIC BASS PARTS

BY CRAIG ANDERTON

ELECTRIC BASS GUITAR IS A VERY DIFFERENT ANIMAL FROM SYNTH BASS. IF you're playing sampled bass from a keyboard or virtual instrument (see Figure 1) and the goal is realism, then these tips—involving tone, MIDI, and technique—will help you create compelling bass lines.

The Bass Signal Chain

Start with a dry, unprocessed sampled bass instrument, then enhance it with suitable processing. This takes more work than calling up a preset, but "baking" an effect into a sample isn't how a real bass works. Bass interacts with its environment.

Bass recording usually involves a direct box (DI) running straight into your console or audio interface, a miked amp, or both. The dry sound is essential for a DI emulation. An LA-2A or 1176-type compressor, which can give a more "aggressive" sound for rock and R&B than an SSL-type bus compressor, is typically next in the signal chain. Bassists use compression for several reasons (sustain, even response, touch) but because many playback systems and the human ear lose response in the bass range, consistent bass levels have a better chance of being heard. Some bassists prefer limiters over compressors because taming only the peaks can give a more natural sound.

Regarding EQ, a significant high-end boost emphasizes pick noise and overtones. Psycho-acoustically, the ear can fill in the fundamental better if it receives this additional high-frequency information. When mixing, this also leaves a little more room for the kick. For the DI sound, I prefer EQ after compression (see Figure 2).

For the miked-amp sound, run a bass amp simulation in parallel with the dry track and blend them instead of using a sample that incorporates an amp sound. The sampled bass will interact with the simulation, so there will be less distortion when you play more softly. Also, many amp sims let you vary virtual mic placement in relation to the simulated cabinet's speaker cone: centered gives fuller lows, to the side gives a tighter sound, and off-axis makes the sound more diffuse. As in real life, I generally place one mic close to the speaker and just a bit off-center, with a second mic back, perpendicular to the cone's edge, and mixed lower. Reversing the second mic's phase can also provide useful effects. I almost never add room sound to bass.

Unlike guitars, bass sims don't need to produce heavy distortion—which is very difficult to get right. All the main players (IK, Native Instruments, Softube, Waves, Line 6, Overloud, Studio Devil, Peavey, etc.) make fine bass amp sims; IK's SVX model in AmpliTube 3 (see Figure 3) nails several classic Ampeg bass amp sounds.

MIDI Timing

One of MIDI bass's big advantages is being able to tweak timing. Traditionally, kick and bass compete for the audio spectrum's low end, and because bass is non-directional on playback, they're both panned center—so they potentially obscure each other even more. Try this: To emphasize the bass and the melody, move the bass a few ticks ahead of the beat, but not enough to hear any

- Download ten note slides sampled from Gibson's EB-5 bass, in 16-bit/44.1kHz WAV format.
- Hear these techniques in action at youtube.com/thecraiganderton.

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Fig. 2. An 1176-style compressor followed by a +3dB shelf starting around 2kHz gives dry bass a smooth, defined sound in a mix.

Fig. 3. IK Multimedia's SVX is modeling an Ampeg BA-500. Note the mic positions for the virtual cabinet.

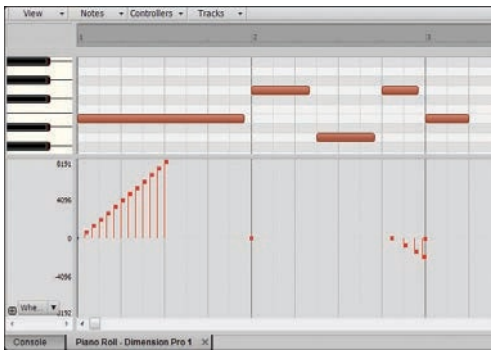


Fig. 4. The first slide goes in half-steps from tonic to an octave higher. The second one slides from *G* to *E* and steps down over three semitones. The pitch bend then returns to zero before the next *E* plays.

kind of delay. To emphasize the kick and rhythm, move the bass slightly late. The bass actually sounds softer when late and louder when ahead.

Slides

Slides are an important bass technique—not just up or down a string, but over a semitone or more when transitioning between notes. For example, when going from *A* to *C*, you can extend the *A* MIDI note and use pitch-bend to slide it up to *C* (remember to add a pitch-bend of zero after the note ends).

Unless you're emulating a fretless bass, you want a stepped, not continuous, slide to emulate sliding over frets. Quantizing pitch-bend slide messages so they're stepped is one solution (see Figure 4). Even if they're not exact half-steps, they go by quickly enough to be perceived as non-continuous. For example, with a virtual instrument's pitch-bend set to +/-12 semitones, quantizing the bend to 32nd-note triplets will give exactly 12 steps in a one-beat octave slide up, while a sixteenth-note triplet gives 12 steps over a *two*-beat octave slide. Make sure there's no smoothing enabled for the pitch bend function.

For precise slides, the following table shows the amount of pitch-bend change per semitone. For example, if an octave is a pitch-bend value of 8,191, and you want to start a slide three semitones above the note where you want to "land," start at a pitch-bend value of +2,048 and add equally-spaced events at +1,366, +683, and just before the final note, 0. This assumes your virtual instrument has a pitch-bend range of +/- 12 semitones, which is what I use for bass to make these kinds of slides possible. (Note that pitch-bend has a resolution of 14 bits with two bytes, which is why we're dealing with these big numbers, not the usual MIDI CC values of 0 to 127.)

SEMITONES	PITCH-BEND VALUE
0	0
1	683
2	1,366
3	2,048
4	2,731
5	3,413
6	4,096
7	4,779
8	5,461
9	6,144
10	6,826
11	7,509
12	8,191

Another option to add realism: Borrow a real bass, and record slides (it's not that hard) into a sampler or SFZ instrument (see last month's issue for my column on rolling your own samples). I created several bass instruments for Cakewalk's Dimension Pro using a Gibson EB 5-string bass, and each one dedicated one octave to slides—five downward, and five up/down. Occasionally adding these promotes a realistic vibe—and you can download ten free EB slides online.

Mod Wheel Options

If your modulation wheel controls vibrato, reprogram it to one of these alternatives for more realistic performance control.

Drive amount. Tie the wheel to drive amount so that rolling the wheel forward adds "growl."

Treble pullback. Pull down the highs by lowering a lowpass filter cutoff or tone control frequency when the bass needs to sit more demurely in a mix.

Hard picking. Roll the mod wheel forward to increase amplitude of an envelope spiking a lowpass filter to give a quick, bright transient. If you can control more than one parameter at once, a very slight upward pitch bend from the same envelope can enhance the realism.

Sub-octave. Some bassists play higher on the neck and use an octave divider for a huge "eight-string" bass. Roll the mod wheel forward to add the sub-octave at dramatic moments. [*This is a signature sound of renowned bassist Pino Palladino. —Ed.*]

Wah. Create another layer with the wah, and overlay the wah on top of your main layer. Adding wah to the main bass sound dilutes its power.

Playing Technique

There are bass fingerings that allow seamless transitions between notes, but it often takes some time to lift a finger off a string, push down on another string, and pluck it. To simulate this, leave spaces between notes, especially when you want to emphasize a song's rhythm.

Most importantly, remember that bass straddles the rhythmic and melodic worlds, with different music emphasizing different elements. Bass can do anything from acting like a melodic kick drum to providing harmonic counterpoint—but a good bassist (or virtual bassist!) never forgets that bass is part of the *rhythm* section.

Improve the Groove

PART 2: CUSTOMIZING LOOPS

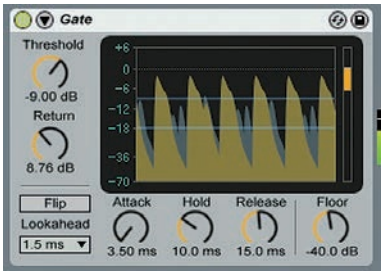
BY FRANCIS PRÈVE

LAST MONTH, WE LOOKED AT SMALL RHYTHMIC AND TIMING TWEAKS THAT CAN DRAMATICALLY IMPROVE THE FEEL of an electronic dance track. This month, we'll look at ways to customize pre-existing loops. While some producers go deep and completely transform their loops into sonically unique track elements, there are several simple techniques that let you quickly customize your loop material into something with more creative expression.

Half Measures

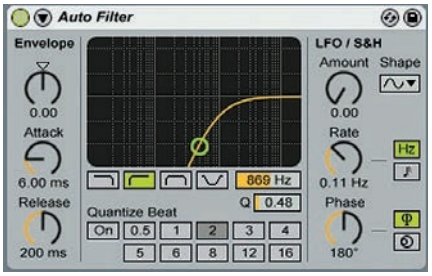
Here's a little secret for increasing the energy in a drum loop: Crop it to a half-measure. While one- and two-bar loops are certainly more complex, you can quickly achieve a more driving, energetic feel by simply shortening the loop to a half-bar. Even the funkiest drum loop can be transformed into driving techno using this technique, so if you're looking to make "hard" music, this trick should be at the top of your list.

Gating



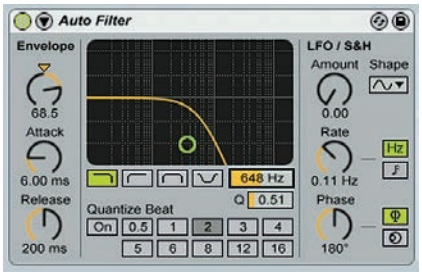
Sometimes a loop will contain a kick and snare that you dig, but will also include percussion elements that are too dense and busy. In most cases, the kick and snare are the loudest elements in a loop, so by applying a noise gate to its track, you can effectively isolate those elements while muting the rest. Start with the gate's default preset then adjust the threshold until just the kick and snare are present. From there, tinker with the gate's attack and release to remove any pops or click.

Highpass Filtering



This may seem obvious to some, especially considering that countless libraries use this technique for the creation of their "top loops," but for those who are just getting into soundware, a highpass filter is a great way to minimize the kick, snare, and mid-frequency percussion while keeping the shakers and hats intact. This trick alone will stretch the value of even the oldest loop collection, so if you hear a groove with great top-level elements but want to use your own kick and snare, this is the way to go.

Envelope Followers



Many modern plug-ins, especially filters, now include envelope followers. While these are ideal for wah effects, slapping a lowpass or bandpass filter with the cutoff modulated by an envelope follower is a tried-and-true method for adding a "French house" element to your grooves. Check to see if your flanger plug-in includes an envelope follower as well (many of Ableton Live's effects include envelope followers baked right in). When applied to flanging, this technique gives loops a squishy, wobbly vibe that's great for tech-house and techno.

Get Your Freq On

If you really want to get freaky, conga and bongo loop elements can be transformed into synthetic djembes and dumbeks by applying frequency shifters and ring modulators, with a touch of slow LFO modulation of their frequency. To get the best results, start with lower frequency settings and tinker from there. Higher values will give a "shortwave radio" effect, which is also cool for techno and harder genres.

SOUNDCLOUD

Audio examples.

keyboardmag.com/july2014

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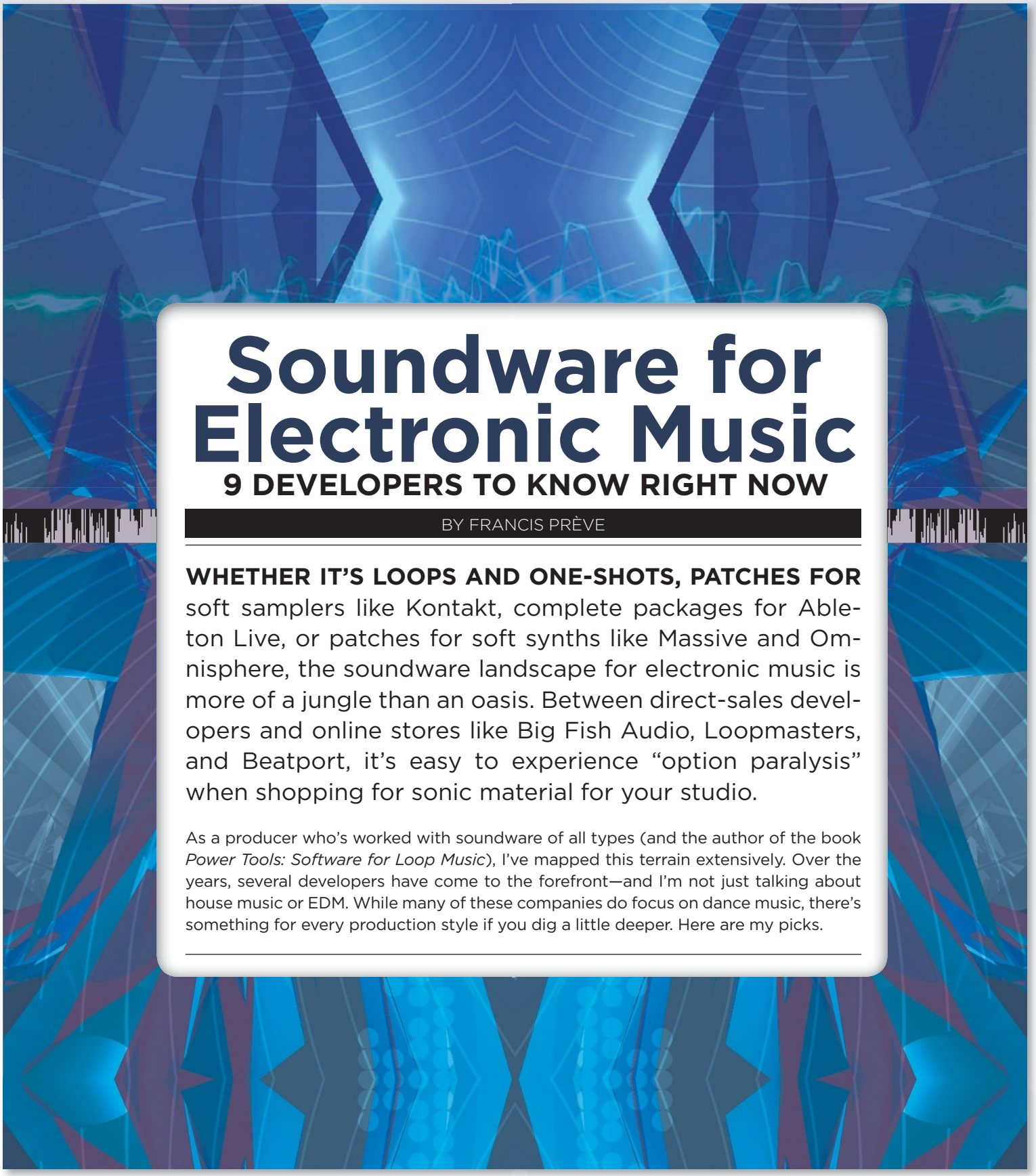


Soundware for Electronic Music

9 DEVELOPERS TO KNOW RIGHT NOW

BY FRANCIS PRÈVE

WHETHER IT'S LOOPS AND ONE-SHOTS, PATCHES FOR soft samplers like Kontakt, complete packages for Ableton Live, or patches for soft synths like Massive and Omnisphere, the soundware landscape for electronic music is more of a jungle than an oasis. Between direct-sales developers and online stores like Big Fish Audio, Loopmasters, and Beatport, it's easy to experience "option paralysis" when shopping for sonic material for your studio.

As a producer who's worked with soundware of all types (and the author of the book *Power Tools: Software for Loop Music*), I've mapped this terrain extensively. Over the years, several developers have come to the forefront—and I'm not just talking about house music or EDM. While many of these companies do focus on dance music, there's something for every production style if you dig a little deeper. Here are my picks.

Big Fish Audio

As both developer and distributor, Big Fish Audio has been a titan of soundware for close to 30 years. You don't achieve that kind of staying power if you're not delivering both quality and range in your offerings, so when it comes to soundware, if you can imagine it, they've produced it.

In the this feature, it would be impossible to cover Big Fish's gargantuan catalogue, but I'll say this: I've been using their products for well over a decade on projects ranging from TV commercials to remixes for "name" artists. In fact, their *Rush 2 Progressive House* library still gets a workout—even in my newer tracks, despite its age—thanks to its useful array of sound effects, explosions and sweeps.

As for their latest material, Big Fish is on top of the festival trends with their *Dancetronic*, *Future Complextro*, and *Progressive House Hits* (for Kontakt) libraries. While the construction kit approach to organizing many of their libraries may feel a little *too* easy for artists who prefer to handcraft their productions, for jingle and commercial work, they're absolutely indispensable – especially if you're working on a tight deadline with a fussy client who wants the "now sound of today" for their spot.

The Big Fish construction kits are still workhorses when it comes to drums, effects, and genre-specific basses. Not all of their products rely on the kit approach, so if you want a collection that's more flexible in specific areas you just have to shop harder—but rest assured, you'll find it. **bigfishaudio.com**

Vengeance Samples

German developer Vengeance has been a staple in electronic music production libraries for close to ten years, despite being rather difficult to find in the U.S. The American distributor is ReFX, the company that brought us the Nexus and Vanguard soft synths.

Vengeance libraries aren't just useful, they're kind of legendary. Martin Garrix's platinum-selling "Animals" relied heavily on several Vengeance samples. Steve Angello's "KNAS," a number one Beatport hit in 2010, is based *entirely* on a lead synth loop snagged from Vengeance *Future House Vol. 2*, so it's safe to say that Vengeance samples and loops are extremely well-crafted.

Vengeance's strongest collections are largely focused on the "festival" sound. Their trance libraries have been used by countless big name producers, including former students of mine, Tritonal. Their progressive house libraries have helped to launch careers. Even Deadmau5 relied one or two of their earlier electro collections when he was just getting his start in electronic music.

The biggest caveat with Vengeance material is that it gets dated quickly. "Timeless" is not a word I'd use here. But for some producers, that's exactly what's needed to stay competitive in certain areas of the EDM landscape. Because of this company's slavish devotion to being absolutely current, I'd even go so far as to say that stocking up on this season's crop of Vengeance libraries is about as close as one can get to hiring a ghost producer—provided you release those tracks before someone else does. **vengeance-sound.com**

Sample Magic

Sample Magic burst onto the market about five years ago and quickly rose to the top of professional scene, not just because of their impeccable production standards and engineering chops, but because the material in each collection was absolutely spot-on in terms of genre credibility. My verdict from previous reviews of their products still stands: If you want your productions, whether they're original music for film and TV or straight-up remixes, to have a certain streetwise air, Sample Magic should be among your priority purchases.

As for their older collections, some of the material remains evergreen, specifically the *Funky House Grooves* series, which includes amazing conga, percussion, and top loops throughout.

As for their newest releases, the magic remains in full effect. If you're an old school disco lover (or fan of Daft Punk, minus the expensive sample licensing), their *Hed Kandi Disco House* collection is mind-blowingly good. In terms of acoustic material, the *Tribal Percussion* loop library has real staying power, thanks to its inclusion of ethnic drum loops in both mid-tempo (100 bpm) and house (120 and 126 bpm) ranges.

While the Sample Magic brand is clearly focused on dance music, much of their catalogue is far more flexible. For example, the *Disco and Swing Brass* library will easily accommodate rock, pop, and jazz genres and the *Vintage Breaks* series is loaded with uncanny recreations of famous acoustic drum grooves.

That said, they continue to deliver the goods when it comes to modern dance sounds, notably their *EDM Superstar Sounds* libraries for Massive and Sylenth. Make no mistake, Sample Magic delivers astonishingly high quality material across the board. **samplemagic.com**

Loopmasters

I've been a fan of Loopmasters since their Joey Youngman *Jacked Out Future House* collection, which has found its way into a couple of my remixes over the years. While their website serves primarily as an online shop for numerous developers, their in-house libraries are stellar, thanks to their ongoing approach of recruiting top producers.

In addition to Joey's collection, I've become a fan of several of their newest products, notably the Sebastien Leger *Funky Tech House* and the Philip Bader *Rough Tech House* libraries. If you're a fan of either, these are about as close to collaboration with those artists as you can get.

Loopmasters' products aren't exclusively artist-centric. They've got a slew of other libraries that are more genre-specific and of uniformly high quality. Best of all, many of their products come in customized versions for Reason, Live, and Kontakt. And if you're looking for just specific elements (say, just drums), many of the collections can be purchased on a per-instrument basis at a lower price. This is especially relevant for keyboardists, who are capable of coming up with their own unique riffs and may just need a tight groove and the odd vocal sample. **loopmasters.com**

Toolroom Records

U.K.-based Toolroom Records has been at the forefront of the European dance scene for over a decade, with countless releases by names like Mark Knight, Fedde Le Grand, and David Guetta, so their legitimacy in this market is massive. Like several other dance record labels, they've leveraged this credibility into the soundware and loop market, with a focus on classic house, tech house, and a bit of progressive.

They kicked off their soundware series in 2010 with a varied collection of synth and drum loops curated by label head Mark Knight. *Toolroom Records Samples 01* is brimming with extremely high quality material that encapsulates the label's impeccable taste in funky grooves and synth programming.

With that success under their belt, Toolroom ramped up in 2013 with four more collections of samples and loops, all of which became instant hits with the underground house community, thanks to their production aesthetics. While more narrowly targeted dance libraries often sound dated within a year or so of their release, the Toolroom series has a timeless quality. The synth material tends to date itself over time, but the drum loops—with their gorgeous EQ, compression and undeniable groove—will last a lot longer than most.

This spring, Toolroom released two new libraries that focus even more on what house producers need right now. Their *Ultimate Drum Loops* collection is organized into small construction kits that include isolated top loops, percussion loops, and main drums for each. This makes arranging your intros, breakdowns, and drops a total breeze.

Their other new release, *Essential Progressive Leads*, is a bit more restrained than many of the latest EDM packages, but in my experience that's a great thing because it extends the "expiration date" further.

The bottom line is that Toolroom is a gold mine for house producers, or any composer who needs to sound like one. **toolroomrecords.com**

Cr2 Records

Cr2 Records is another dance music label that's been sticking a big toe into the soundware market. Rather than simply focus on the "big room" progressive and electro that's dominated their artist releases of late, their foray into sample libraries shows a lot of range so far—despite the fact that only five are available at the time of this writing: *Heavy Electro*, *Sound of Techno*, *EDM Festival Kicks and Drops*, *Deep Analogue House*, and *Bass Music*.

The electro and EDM entries sound very "of the moment," but the techno, house and bass music libraries look like they'll stand the test of time a bit longer thanks to their production quality. While the *Analogue* and *Festival* entries are strictly audio samples and loops, the electro, bass and techno collections also include MIDI files and Native Instruments Massive presets, adding considerable value. What's more, their newest *Bass Music* library also includes 20 minutes of video tutorials.

Considering that Cr2 has released five libraries in the span of four months, it looks like they're getting serious about the soundware market. I'll definitely be watching out for new releases. So should you. **cr2records.com**

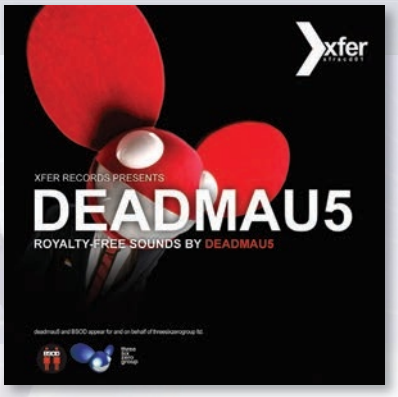
Wave Alchemy

For a boutique soundware developer, Wave Alchemy has a sizable following among the biggest names in dance music. Chris Lake, Noisia, Umek, and Robert Babicz have all used their loops and samples in their productions. What's more, visionary upstart Matt Lange has contributed countless samples and loops to several of their collections, so the Wave Alchemy portfolio truly is "by producers for producers."

One of the great things about their line is that much of it is actually quite timeless and ripe for further editing and refinement of your own. While their special FX collections include excellent risers and transitional effects, they also include extremely complex soundscapes that are absolutely inspirational in the right context.

The same goes for their outstanding new *Synth Drums* collection, which includes ready-to-roll versions for Battery, Kontakt, and Reason's Kong. It's also available as an Ableton Live pack and of course, individual hits for those who like to roll up their sleeves and tinker with the material directly.

Wave Alchemy libraries aren't strictly for dance music, either. *Modern Guitar Tools* is a new offering that's absolutely top-notch and includes a vast range of loops ranging from funk to rock to heavily processed experimental fare. I can heartily recommend it for artists looking to have guitar material handy for everything from old-school disco to Radiohead-style ambiences. **wavealchemy.co.uk**



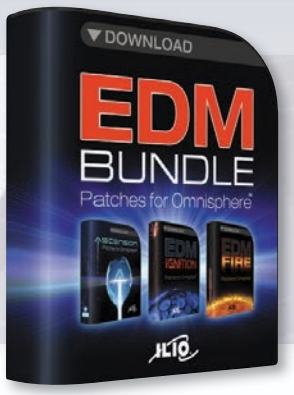
Xfer Records

Steve Duda's metamusic company, Xfer Records, has only released one library, *Deadmau5 Xfer*, (available from Loopmasters) but it's arguably one of the most popular collections in the history of dance music. Why? Because it was designed specifically for Deadmau5 and was used extensively in his early work.

So, if you need "the official sound of Deadmau5," this is a turnkey solution, but it's good for more than just that. In the words of Steve Duda, "We tried to make an assortment featuring a variety of sound sources . . . so they can fit into a production workflow without stamping their own flavor on a mix."

In my own productions, I've found this to be true. I've relied on the kicks, claps and hats in this library countless times. In fact, the single-shot samples here are among the best I've ever used. That said, some of the synth loops have begun to show their age—but that's to be expected from any collection that's been around for over five years.

There are rumors that there's another Deadmau5 library due in 2015. If so, be sure to keep your eyes and ears peeled for it. It will be another instant classic in a market that's overflowing with options. **xferrecords.com**



Ilio

While many of these collections in this roundup are loop-centric, Ilio's series of EDM patches for Spectrasonics' powerhouse soft synth, Omnisphere, deserves a mention of its own.

Omnisphere is one of the most powerful plug-ins available for hardcore synthesists, with a depth that puts it in a class by itself. But tapping that power—especially in the context of electronic music, dance or otherwise—can be a bit daunting if you're not intimate with its capabilities.

Fortunately, Ilio's EDM collection provides ample song-starting inspiration while leaving plenty of room to compose your own riffs and leads. Each of the four EDM libraries—*Ascension*, *Ignition*, *Fire*, and *Eclipse: Lunar*, cover a different aspect of dance and electronic music production (and the first three in that list are available as a bundle). *Fire* focuses on nastier, grittier textures. *Ignition*'s more up-front sound delves into electro territory. *Ascension* includes over 200 tempo-synced rises and whooshes, all of which are extremely detailed and flexible. Finally, *Eclipse: Lunar* is the most versatile of the bunch and probably won't date itself as quickly. There's also another collection, *Eclipse: Solar*, that's queued up for release this summer.

I was extremely impressed with the range of flavors in each of these packages. And because they're Omnisphere patches, they're *playable* in a way that loopware normally isn't. So, if you're looking for patches that stand apart from the Massive-Nexus-Sylenth collective, and you think more like a keyboardist than a producer, these bundles are both affordable and extremely useful. **ilio.com**

KORG Kross

BY KEN HUGHES

WE THE KEYBOARD-PLAYING PEOPLE ARE GETTING TO ENJOY PRETTY GREAT sound for prices creeping ever closer to chump change. Case in point: the Kross. Ostensibly it's Korg's "entry level" synth workstation, but its sound engine is derived from the flagship Kronos. By judiciously reducing the feature set and building it in a lightweight all-plastic enclosure that should result in chiropractors earning a little less, Korg offers the hobbyist and weekend warrior (whether they play in bars, churches, or what have you) what seems to be a pretty compelling choice.

Overview

The Kross continues Korg's streak of delightfully different industrial-design ideas; Starting with the Radias and continuing through the SV series stage pianos and KingKorg virtual analog synth, it's been pretty easy to spot a Korg product based strictly on its shape. Here, things are comparatively subdued, with the wildest feature being the red parts of the enclosure and the seemingly cute but rather sensible built-in carry handle to make the Kross 61's sub-ten-pound weight even easier to manage. The panel is all go and little show, with gold lettering on a gloss black background. In some lighting conditions, reflections from the shiny panel make it hard to read the labels. But as with the labels on any synth, the more familiar you become the less you actually *do* read them.

Korg placed the pitch and modulation wheels—rather than their customary joystick—above the keys instead of at the left end, obviously to keep the footprint tight. It's up to you whether this is the "right" or "wrong" place to put them. I found that I adapted to this positioning without much thought. Above the pitch and mod wheels, two assignable switches offer a ton of options: locking the pitch wheel, changing the octave, muting and unmuting Combi layers, toggling portamento, and on and on.

To the right of the volume knob is a pair of clicky wheels that scroll you through the sounds. The leftmost wheel calls up categories that are grouped in a sensibly musical manner, and the right wheel scrolls through the sounds in that category. The Category wheel basically bookmarks the first sound in each Category. Moving to the right, we find the LED-lit buttons that select Program, Combi, and Sequencer modes, below them buttons that get you into the Global mode (where you do system-level things like set the velocity curve and damper switch polarity), set up splits

Snap Judgment

PROS Excellent sounds. Highly portable. Able to run up to four hours on battery power. Light and fast keyboard action. Sequencer is easy to use. Preset beats and phrases are very musical. Records audio along with sequences to SD card.

CONS USB connection and audio input not implemented in a way that makes the Kross a USB audio interface. So lightweight that you may need tape or Velcro keep it in place in your stand.

and layers, toggle the master effects, and mute and unmute the audio input.

Still moving right, we find two buttons for the audio recorder: Setup and Play/Pause. Worth noting is that the audio recorder requires a formatted SD card to be plugged into the slot in the back panel. Formatting must be done on the Kross itself, but it's easy. Press and hold Exit while holding Global/Media, page up once using the Page+ button below the LCD, and you're there. SDXC cards are not supported, but SDHC cards up to 32GB in size are.

The display itself is well done; the screen layouts and graphics are clear and easy to read, though they do get packed a bit dense when you're using the sequencer.

I was charmed by the step sequencer. The 16 buttons above the top two octaves of keys correspond to 16 steps; lighting them up enters a step for the currently selected voice. This is exactly how Korg's Electribe groove boxes worked, and all of them (plus countless other products) derive this scheme from the venerable Roland TR-808. There's a reason so many devices cop this way of working. It's easy for the uninitiated to quickly understand, and once learned it's immediate and fun.

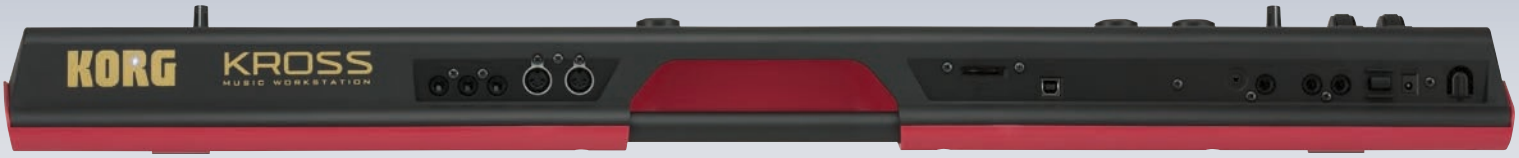
In Use

Shortly after receiving the review until I got a call to do a pretty unusual gig. A conference of food-distribution executives were going to be broken into groups of a dozen or so. Each group would be tasked with writing new lyrics to its assigned well-known pop song, incorporating aspects of company culture and daily work experience. Then, each group would elect/conscript a solo performer to perform its song with the band for the whole assembly, *American Idol*-style. Wild set list: "Livin' On a Prayer" by Bon Jovi, "I Dreamed a Dream" from *Les Miserables*, "Oh What a Night" by Frankie Valli and the Four Seasons, and "Surfin' U.S.A." by the Beach Boys. The band's task was to perform the songs matching as exactly as possible the original recordings, as the performers would have only the original recordings to work from and one 15-minute rehearsal with the band.

Upon setting up at the gig, it became apparent that I was going to need to secure the Kross to my X-stand with gaffer's tape, as it's *so* light it felt like it could slide right off at the slightest provocation, and it's small enough that I couldn't slide all of the stand's rubber bushings inside the Kross' footprint. Nice "problem" to have.

"I Dreamed a Dream" was a challenge because the original recording was symphonic, and I knew I'd likely have an inexperienced singer who needed a rhythmic reference in the absence of the drums, so I elected to bang out an eighth-note accompaniment on a piano/string layer, with the strings' volume tied to the mod wheel so I could swell them right at the key change when the band also came in. I made up a quick layer with Program A000, "Kross Grand Piano" and B043, "Legato Strings 1," which already included volume control on the modulation wheel. But I discovered that the mod wheel was also tied to the piano patch's brightness, which I didn't want, so I had to copy the piano patch to a user program location, assign the mod wheel routing to "off" in the Program's Filter menu, and use *that* version of the piano layered with the strings. This only took about two minutes, and I hadn't even opened the manual yet.

"Surfin' U.S.A." has an organ solo and no other keyboard part, but the organ sound is fairly specific—it has a little bit of grind and a lot of the top-end rolled off either by the speaker itself or via EQ. Combi A054, "Rock Organ," was just the ticket with the mod wheel parked at about halfway to bring in



The fairly basic rear panel is where you'll find inputs for a sweep pedal, assignable footswitch, and a damper that—unusually for a keyboard at this price—supports half-pedaling when used with Korg's DS-1H pedal (sold separately). You can record audio from the 1/8" audio input and 1/4" mic input alongside what you're playing on the synth, to an inserted SD card.

the layer containing the sampled-in distortion.

What we all remember about "Livin' On a Prayer" is Richie Sambora's iconic talkbox guitar riff, but David Bryan played plenty of keyboard parts. The intro needs an analog synth pad for the moody buildup and a bell-like sound for a little riff right before the vocal enters. Under the verse is a chop-chop-chop part on a percussive analog synth sound (Bryan's Memorymoog, perhaps) and fat chord stabs for accents. Under the pre-chorus are a high string stab/ostinato and a bright analog poly synth. When the chorus arrives you get out of the way of the guitar with some high, sparse chords on a thin pad. Even with Kronos technology baked in, could a $700 battery-operated keyboard cut it?

The answer is actually a little anti-climactic in a way. Yes, the Kross gave me what I needed, but I didn't even have to delve into programming it. Incredibly, Combi B033, "Majesty Pad" did it all. By playing softly, I brought out a simple analog pad sound for the intro. Playing hard copped both the bell riff *and* the chop-chop thing convincingly. Playing very staccato and defeating the effects with the Master FX button got the chop, and bringing the effects back while playing block chords got the fat stabs. I played the pre-chorus ostinato hard with my right hand while playing the bright pad softly with my left. It was uncanny. I don't know who to thank for this patch, but I raise a glass to you, sir or madam.

Had this *wunderpatch* not been available, I could have used the Split and Layer functions to quickly build what I needed and save it into the User memory. From there I'd have placed it into my Favorites for quick recall, but I'm getting ahead of myself.

"Oh What a Night" was the only song on which I had to bring in another synth, and not because the Kross couldn't give me the right sound. For the song's two synth breaks, I needed a Minimoog-like lead patch, and the Kross has many good ones in the Lead Synth category and lots of raw material to build one from scratch if none of the presets had been right. In rehearsal I just couldn't manage the patch change from the piano to the synth and back again quickly enough, even using Favorites. In the end I had to reach for a second 'board, with the lead sound waiting for me there.

The Favorites feature is great—lots of synths have some version of this capability, but I appreciate this simple and straightforward implementation. Pull up a patch you like, press and hold Exit, then the Favorites button, then one of the row of buttons numbered 1-16 (the same ones you use for the step sequencer). Done. Love it. Four banks of 16 let you store 64 Favorites, so with a little planning you could easily line them up to match your set list.

The sequencer on the Kross is a 16-track affair with a lot of capability. It's far more than a scratch pad, offering fine editing down to the measure. A couple of things to know: First, to quantize or not must be decided upfront as there's no after-the-fact auto-correct. Second, you can't save sequences to internal memory, only to an SD card. Luckily, SD cards are cheap. The capable "mixer," which offers a couple of effects sends, uses the Master FX "devices." Programs don't keep their own Master FX when used in the sequencer, only the effects that exist at the Program level, but that's good news as things like tremolo, rotary speakers, amp simulations—effects that become part of the essential character of the sound rather than just seasoning—are handled at the Program level.

Even though it's more than a scratch pad, it seems that the sequencer was really made to take advantage of the fact that every Combi has a drum track and a polyphonic arpeggiator programmed in, so that using it as a scratch pad would be very quick and easy. The drums and arp—which in a lot of the Combis function like auto-accompaniment but way hipper than polkas and tangos—sync to the sequencer clock (which can be set in real time with either the Tempo knob or the Tap Tempo button right beside it), making it really immediate to get something going. Use a Combi as your foundation and add overdubs, then connect a mic to the input on the back panel (it's just 1/4" unfortunately) and record the audio of your sequence plus a vocal or external instrument as a WAV file directly to an SD card. Darned near instant demo. Nice! Each sequencer track has three MIDI sync settings: internal, external, or both, so other hardware can be harnessed in your multitrack creations.

Conclusions

I thoroughly enjoyed my time with the Kross. I feel the same way about it as I did Korg's PS60—it's a fantastic choice, and an absolute godsend on gigs where parking is a long way away from the load-in (or you're getting there by public transportation). I liked the PS60's keyboard feel better than I like that of the Kross, but in this price bracket you don't often get keys that make you wax ecstatic. Its closest competitor is the Yamaha MX61. On paper, the MX61 seems to have the Kross beat; the former offers audio interface functionality, more polyphony (128 voices versus the Kross' 80), and a larger ROM wave stockpile. Let your ears in on that part of the decision, however, and go with the *sound* you prefer; judging a synth's worth on ROM numbers is just plain silly, and there's no question that the Kross sounds great. The MX61 doesn't offer a multitrack sequencer (opting instead to bundle a "lite" version of Cubase for your PC or Mac) and isn't as physically small, although both weigh less than ten pounds. But don't count the Kross out until you've played it. I think you might be surprised by what you experience. ♫

Bottom Line

The Kross offers the sound quality of Korg's big dogs for hobbyist money, in a package you can take anywhere. It's fun to sound this good so affordably.

Kross 61: $869 list | $699 street
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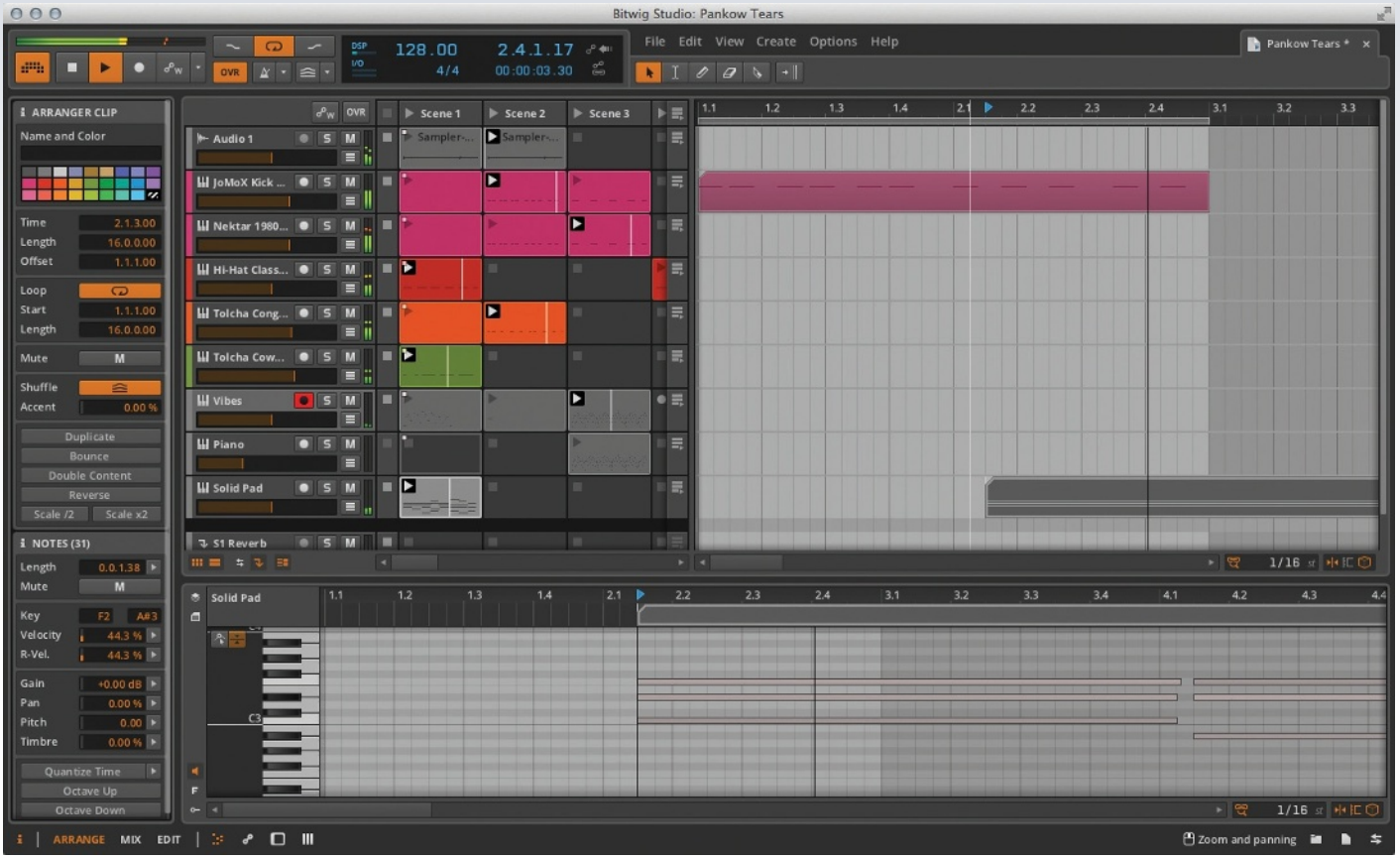

Fig. 1. Not only do clip and linear views appear side by side, but it's easy to toggle which is in control, track by track. Going from improvisation to arrangement and back again is fluid.

BITWIG

Bitwig Studio 1.0

BY PETER KIRN

FOR YEARS, PRODUCERS HAD GROWN ACCUSTOMED TO DIGITAL AUDIO workstations being variations on a theme. For all the significant differences, these tools could be expected to work in the same basic ways. Then came Ableton Live. While adopting some of those conventions, it flouted others, with a non-linear clip-based structure as the centerpiece. Now, Bitwig Studio is the first real challenger in the same mold as Ableton, and for a 1.0 outing, it's surprisingly complete. Do the sum of its parts add up to a worthy alternative to other DAWs?

Overview

Bitwig makes many design decisions that are similar to Live. It combines non-linear clips and scenes with linear arrangement, adds a mixer that routes instruments and effects, lets you navigate sounds and devices from a Browser, and so on. Menus and editing panes are so much alike that experienced Ableton users will often find they don't have to crack the manual. That has earned Bitwig some criticism, not in the least because four Bitwig founders came from Ableton.

In fact, though, Bitwig Studio looks like what Ableton Live might look like if given a second blank slate. And Bitwig offers some twists, including more of the editing and arrangement conventions of traditional DAWs, a powerful modulation system, and lots of original instruments and effects.

Launch Bitwig, and the software steps you through configuring audio interfaces, controllers, and sound packs. Then, the program brings up what looks like a typical multitrack DAW editing window (see Figure 1).

Along the bottom of the screen, choose Arrange, Mix, or Edit, and you can focus on one task: linear arrangement (like most DAWs), clip launching and mixing (like Ableton's Session view), and focused, full-screen editing (much like Cubase, but absent in Live). You can also choose

Fig. 2. While effects and instruments may have a plain vanilla appearance, the actual implementations are terrific. You can also see which devices you've added to each track in the overview.

Editing and Modulation

For mouse-based editing, it's tough to beat Bitwig Studio. Everything that works with clips and clip automation in Ableton Live, more or less, works here. But to that, Bitwig adds features seen in DAWs like Cubase. There's an ever-present Inspector tab for quick, one-click access to lots of editing and properties. And once you get into either note or audio data, you're given a fantastic amount of control.

With audio, you're free not only to split by transients and the like, but also slice up sounds within clips—finally. That lets you easily transform clips and divide and combine them. In addition to the usual envelope options, you can edit per-note expression and micro-tune pitches one note at a time. Using layer editing, you can edit multiple clips at once, not to mention audio and MIDI together at the same time.

I think my favorite editing feature, though, is one that's gotten the least attention: bouncing in place (or to a new track) is extremely quick. Sure, you don't get any clever audio-to-MIDI conversion. But the ability to bounce out audio is often more useful, especially when combined with the "Slice to Drum Machine" and "Slice to Multisample" features.

As to modulation, Bitwig Studio is in a class of its own, rivaled only by the likes of Reaper or Propellerhead Reason. So long as you use Bitwig's built-in devices, you can route all sorts of modulation from anywhere to anywhere. That includes various parameters in the synths and effects as well as dedicated LFOs. The implementation is pleasingly simple: just point at the modulation you want to use, and where you want it to go, and you're done. It's possible to hack some of this functionality with Max for Live in Ableton, but it's a far cry from having modulation everywhere, natively.

Unfortunately, Bitwig Studio feels a little weaker when it comes to other kinds of routing. Side-chaining is present only in the Dynamics device. There are basic sends and receives, but

from some useful view profiles, including the ability to use a second display monitor.

The ability to use these views seamlessly in concert makes arranging tunes in Bitwig a joy. From the Arrangement view, you can quickly pull up your grid full of clips without switching views, and see your mixer, clips, and arrangement side by side. Clips also display contents clearly, with MIDI patterns previewed inside. Cakewalk Sonar did something similar, but the relationship of clips to arrangement could be confusing. Here, it's more fluid than in Live, even: You can toggle between triggering clips directly and playing back a defined arrangement per track. It's easier to see and control. The upshot: you can play with your music using a combination of jamming with clips and constructing horizontal arrangements, rather than having to focus mainly on one approach or the other.

Routing is accomplished largely as in Live—a bay of devices runs horizontally, corresponding to each track. But whereas Ableton shows devices only when selected, Bitwig tucks a preview into the channel strip so you always have an overview of what you're doing (see Figure 2). You can also open multiple files at once, though you must manually toggle the audio engine for each tab. That allows you to drag and drop content between projects, but limits the use of multiple file support for live performance.

The display in Bitwig is always tidy. Unfortunately, it's also somewhat rigid. Most of the time, the scale of UI elements is fixed. The military-gray color scheme is mandatory, too. Icons can often be unclear, and there's not in-line tutorial content as in Live and some other DAWs, so you'll find yourself referring back to the manual when drilling down to individual devices. That said, once you adapt to the different views, you'll likely find working can be very fast. You can fly between views and editing—and editing is one of Bitwig Studio's strong suits.

Snap Judgment

PROS Seamlessly blends clip-based improvisation with traditional arrangement. Advanced, easy editing for audio and MIDI. Modulation everywhere. Solid synths. Amazing effects. Fast and tidy.

CONS Basic audio routing at this point. Little UI customization or scaling. No AudioUnits support on Mac. Still early days for controller support.

Fig. 3. A handy package manager makes installing and selecting additional sample content easy.

little more, and while Bitwig provides devices for simplifying access to external gear as Ableton does, there are more restricted choices for routing MIDI. Bitwig Studio can perform most of the macro parameter assignment tricks that Ableton Live can, but Live's Device Racks have additional options for intuitively combining different devices. Also, Reaper, Cubase, and others have superior routing options.

Bitwig's most revolutionary features are still on the future roadmap. Bitwig says they've constructed all the built-in Devices using their own modular environment—a bit like having Native Instruments Reaktor inside your DAW, only very deeply integrated. For now, that power is accessible only to the developers. When unleashed, Bitwig Studio could really change the equation for people wanting modular power right in their recording environment.

Instruments and Effects

Bitwig may not give you quite the arsenal of tools that a Logic Pro X or Reason or Ableton Live Suite does, but there are some real gems in here. For starters, there's some great sample content. While other tools try to cover the full spectrum of every sampled instrument you might ever want, Bitwig Studio focuses mainly on vintage drum machines, synths, acoustic percussion, and keyboards. There's a lovely Clavinet, Rhodes, Wurlitzer, and grand piano in the deal, plus some well-curated retro selections. It feels a bit like you raided a talented producer's hard drive (see Figure 3). The sample content is fairly raw; it's mostly mapped as multi-samples and will probably require manually adding effects.

The deceptively simple synths cover similar ground. You get a beautiful virtual analog drum kit: kick, snare, tom, hat, and clap. There's also a great multisampler, a poly synth, and the rich FM-4. FM-4 isn't quite as intuitive as Ableton's Operator or as deep as Native Instruments' FM8, but combined with Bitwig's modulation powers, it may see a lot of action.

The synths and samples are nice, but the best bits are the audio effects. Blur is a unique "filter diffuser" capable of some gorgeous timbral effects. The Distortion sounds simply amazing, from subtle warmth to all-out grime, and easily beats any bundled distortion effect in any other major DAW at the moment. There are also some spectacular filters. The rest is more bread-and-butter, but the audio quality of these standouts is worth downloading the demo just to try.

There's also full step sequencer and various other note effects, and everything integrates with modulation.

Taking Control

Bitwig Studio also offers some promising functionality for creating custom control mappings. Using JavaScript, any controller can have advanced bi-directional access to the software: that is, it can both control any element in Bitwig as well as respond (with text and lights) to events as they happen. Bitwig has included tools that make it easy for hackers and vendors to create support.

That should mean that eventually you see lots of vendor- and user-submitted scripts for controllers, whether you're a coder yourself or not. This feels like a 1.0 release, though, in that a lot of third-party support simply isn't there yet. There's a decent bundle of controller mappings for devices from Korg, Akai, Livid, and others, but a lot of controllers are missing. I had the Nektar Panorama P4 to test; support and documentation were still evolving, but eventually the Panorama keyboard could be a killer combination with Bitwig Studio. You can also right-click any parameter and manually assign it to a MIDI controller, of course.

Performance and Comparison

For a version 1.0 release, Bitwig Studio has accomplished a lot. I noticed some strange behavior in a couple of plug-in UIs, and changing presets in internal devices yields some sound glitches. But the software was stable and complete. It also feels remarkably fast and responsive; whereas Live 9 often crawls along on my 2010 MacBook Pro (with conventional hard drive), Bitwig Studio was always snappy. There's something to be said for new blood.

Still, Bitwig has to go toe-to-toe with some very mature DAWs, and there's a lot it can't do yet. There's no video import. Groove options are restricted to percentages; there are no custom grooves. ReWire isn't supported, nor are Audio Units in the Mac version.

Also, while Bitwig Studio improves upon Live's editing functionality, it replicates even some of Live's shortcomings: There's no surround audio support, nor any track comping facility. As in Live, clips can still be a nice way of recording live instruments, but managing and combining multiple takes is still a chore.

This isn't an Ableton killer just yet, however. Compared to Ableton Live Standard, Bitwig Studio's offerings are fairly on par. But at that price, Ableton gives you 11GB of sound content, more complete plug-in support, more extensive routing, more controller compatibility, and video support. Maturity counts for a lot, too: Bitwig is new enough that you should take the demo for a test drive with all your critical plug-ins before investing.

Conclusions

There should be no doubt that Bitwig has built a contender. As a DAW to fire up and begin producing music, it's a lot of fun. It has a welcome combination of detailed editing and modulation with a nicely-curated set of effect and synth tools, and the merging of arrangement and clip views makes the creative process feel a bit more fluid.

Early-adopter enthusiasts will likely be comfortable using Bitwig as a change of pace alongside other tools. At version 1.0, it's still too new to recommend to a wider audience as a main DAW. It is, however, one to watch. My hope, particularly with features like embedded modular synthesis on the horizon, that Bitwig Studio strays further from the molds of other DAWs, particularly Ableton Live. If they can retain this degree of focus and quality, and add more differentiation, we may have a truly new player. ♫

Bottom Line

Bitwig Studio is impressively complete for a 1.0 outing. It won't make you abandon your current DAW, but enthusiasts ready for something new will be rewarded.

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Garritan Instant Orchestra

BY KOREL TUNADOR

THE CHANCE TO REVIEW GARRITAN INSTANT ORCHESTRA WAS A WELCOME opportunity, as the entire premise behind it is such a necessity for so many modern musicians. It's a high-quality library (actually, more like a self-contained virtual instrument) of ready-to-go orchestral combinations and soundscapes. Instead of you having to load and blend dozens of multisamples, articulations, and solo instruments, the developers have taken care of that for you with pre-made ensembles, helping you get to the act of creating music all that sooner. On top of that, Garritan keeps both the storage footprint and the price low, while packing a big wallop sonically.

Overview

Garritan Instant Orchestra (GIO from here on) covers the gamut of orchestral sounds from big brass and strings to pitched percussion and mallets, and everything in between. The stars of the show are the Ensemble Presets, which are pre-programmed multis made up of Instrument Patches, and further divided into two sub-folders: Combos & FX, and Moods. You can access Instrument Patches individually, and of course, craft

Keyboard K KEYBUY AWARD

Snap Judgment

PROS Great sounding orchestral ensembles and creative blends in virtually all instrument categories. Easy for beginners to build-up polished cues in minutes. Useful mapping of layer volumes to modulation wheel. CPU-efficient.

CONS Very few solo instruments. Aria player mixer could use better visual level metering.

Fig. 1. At upper right is the Ensemble Preset name, in this case "Ghost Ship." The white mark at upper left indicates that the patch in slot 1 is what's currently affected by parameter knobs in the lower pane.

Fig. 2. A graphical "key card" makes the authorization process painless.

your own multis from them, but it's important to note that these "patches" are mainly combinations of instruments themselves—just more focused ones. GIO's marketing is very clear that its purpose is to get you from fingers-on-keyboard to finished cue in minimum time, and to do this, it relegates solo instruments to a different product in Garritan's line: *Personal* Orchestra. There are exceptions, including piano, pipe organ, celesta, and harpsichord, but you'll need to look in GPO or elsewhere for something like that lilting *Game of Thrones* solo cello.

Of the Instrument Patches, those classified as Blending Textures map your MIDI controller's modulation wheel to crossfade between two different characters or even families of instruments (say, woodwinds and harp). In fact, many Ensembles and Instruments make great use of the mod wheel to bring in more layers, as denoted by the suffix "MW" in the program name.

All of this runs in Garritan's proprietary playback engine, called Aria, which provides 16 channels of mixing as well as a number of useful sound parameters and effects. These include an ADSR envelope, lowpass and highpass filters, three-band EQ with sweepable midrange, vibrato, and a "stereo stage" adjustment that overrides manual panning with a soundstage based on virtual stereo mic placement (see Figure 1). There's also a nice send-based reverb in the form of an "Ambience" section with several lovely presets.

Installation

Downloading and installing Garritan Instant Orchestra was easy. It weighs in at around 2GB, compared to 30GB for the next smallest orchestral library on my hard drive, and upwards of 200GB for some of my very high-end stuff. Activation was also easy. The "key card" authorization was new to me at first: After downloading, you enter a code to retrieve a PNG file that you then drag onto the GIO screen, and you're good to go (see Figure 2).

I installed GIO on my new studio computer, but as I was leaving for a month of touring I'd mainly be working on my older "road laptop," which has a 2.4GHz processor and just 4GB of RAM—though it does run off a solid-state drive I installed recently. I thought it that working on a slightly slower computer would be a good test of GIO's power needs. I'm happy to report that on my first try I was able to pull up a dozen instances of GIO at once with no problems.

In Use

Once I had everything installed, I was ready to hit the road. I had begun my foray into GIO rather clinically, reading through the manual. It's a great read, written like a primer on what Hollywood composers do and how GIO's features relate.

But having just gotten off an airplane, as soon as I got settled I felt like going off the grid without their tutelage to see just how intuitive GIO and its underlying Aria sample playback engine were. I dove in and immediately got into the mood to make "spy music." I loaded up a reverb-heavy tympani and went for it.

Very quickly I went for the Ensemble Presets "Journey Out to Sea" and "The Jungle" from the Moods bank, and "Wowsers Piano Effect" from the Combos & FX Bank. The end result was a totally fun drama sequence assembled in much less time than it would have taken to load every layer of each pad manually, not to mention the time needed to audition and assign effects and do the proper blending. Listen to audio clip 1, "Garritan the Spy" at keyboardmag.com/july2014 to hear what I mean.

My second session started with a very slow string dirge on top of which I added two different tracks of random snare hits. The classical-style snares in the "Lots of Snares" patch have a very natural, open, mellow tone. Using one part without the snares engaged and the other with tight snares resulted in a nice blend. While experimenting with GIO's modulation wheel mapping, I also found that the snare rolls work *great* when massaging volume in real time with the mod wheel. With small pulses of the wheel, it sounds very human. (Listen to audio clip 2 online.)

Then, some heavy tympani from the "Percussion Wow" patch gave it great motion. A rhythmic ostinato made of marimba and glockenspiel from the "Pitched Percussives" patch was a nice touch as well. It was finished with some low-end wash from the "Ghost Ship" preset and an expressive high string line from "Grand or Dark," which also makes great use of the built-in modulation wheel blending.

The high string line was played in real time with the expressiveness of a live string take. I was able to roll in brightness and volume with the modulation wheel pre-assigned. It was a relief to be able to bring in volume and tonal nuances with just one sweep—without having to map assignments for things like layer volume and brightness myself. Sometimes MIDI is a four-letter word, and GIO really took some of the headaches away.

Since I had such an easy time loading usable presets from the Moods and Combos banks, I decided to start from scratch on a blank palette. I had a quick idea for a motion sequence that called

Fig. 3. The mixer view in GIO's Aria player, showing effects sends, pan pots, and the beginnings of an author-built Ensemble Preset.

for a mixture of marimba, glockenspiel, and pizzicato strings (see Figure 3).

Within a couple of minutes everything was loaded. I balanced the levels on the mixer screen and added a touch of the reverb from the built-in "Ambience" effect. All the better, I had a cool custom sound created and saved before I forgot my idea! I then added some light percussion from the Instrument patch "Percussion Extras" and was now ready to experiment with the "Trill Exchange" Ensemble that I'd noticed in the Combos & FX bank.

This was an interesting one, and definitely not for your average love ballad. Each note is an ominous swelling string trill that peaks into something fitting for a horror scene or a whodunnit, and then calms down into a slow, decaying, sustained trill. This patch was very intriguing but too cacophonous for my specific cue. So I looked more closely at the source sounds in the multi. It is a combination of half-step *and* whole-step trills on strings combined with woodwinds and brass—all at once. It's great fun and I am sure to revisit this Ensemble. But in this instance I just muted the whole-step trills, brass, and woodwinds, and added a single cell of "Marcato Sharp Attack Strings." I then saved this setup in my own user presets for future reference. (Listen to audio clip 3 online.)

Next it was time to experiment with the aforementioned modulation wheel blends. Garritan has set up GIO not merely to generate a bunch of quick layers, but always to give you an overall palette that's *playable*. The pre-programmed options run from anything from a strings-to-brass sweep to armageddon-like swells of multi-instrument dissonance. I went to the "Infinity and Beyond MW" Ensemble Preset, which they describe as "strings and winds expanding to a large orchestra with plodding low percussion." With the wheel down it's very mellow, but start to roll it up and an extremely ominous sustain of "Earth Metal Percussion" and "Earth Cavern Percussion" patches take over. Along with goosebumps.

Conclusions

Garritan has definitely succeeded in creating an expressive and dense musical palette that can immediately take you to realms that are ethereal, bombastic, edgy, happy, sad, or any mood you might associate with orchestral movie and TV soundtracks.

I've heard some musicians say that the GIO library's source sounds are not as realistic and varied as some of the much more expensive and massive orchestral sample libraries. This is true, but they outclass anything you'd expect at this price. And again, the designers didn't have that as their goal in the first place. They set out to give you combinations that would amount to something larger than the sum of their parts, while freeing beginners from significant amounts of time that would have been spent weeding through part after part to assemble the right blend. In fact, I suspect that even composers who are experts at that process might find themselves turning to GIO when they want to work more quickly and the gig calls for its ensemble-oriented sound.

I applaud Garritan's efforts as well as their perspective. My only wish list items involve details in the visual aspect of the Aria player. Specifically, I'd like to see some "LED" metering on the mixer channels (as in a DAW) for some visual feedback on what's going on with the individual Instrument Patch levels when I work the modulation wheel. Also, when browsing for a new sound, I'd like to see some sort of marker showing the currently selected preset. When you're in the midst of hunting for the right sound and so many presets have esoteric names, it's nice not to ask yourself "Did I just hear that?" A visual reference would do the trick here. (Note: You *do* get a marker showing which patch in an Ensemble is currently affected by the onscreen effects controls.)

These are minute details when compared with what you're getting for the price. It's no mean feat to create something simple that can overtake you creatively without overwhelming you technically, and Garritan Instant Orchestra has not just shown it's possible, but excelled at it. It's about quickly creating larger-than-life soundscapes with evolving aspects that are playable in real time—the first time. As such, it earns our hearty recommendation for any keyboardist's or aspiring composer's "my first virtual orchestra program" . . . as well as our Key Buy award.

When Berklee-educated ***Korel Tunador*** *isn't playing keyboards and guitar with the Goo Goo Dolls or Katy Perry, he's performing in support of his own releases,* No Tomorrows *and* The Early Mournings *EP. Find out more at koreltunador.com.*

Bottom Line

If you can trade fine-grained customization for playability and ease of use, Garritan Instant Orchestra is the quickest way for a composing newbie to sound like John Williams or Hans Zimmer.

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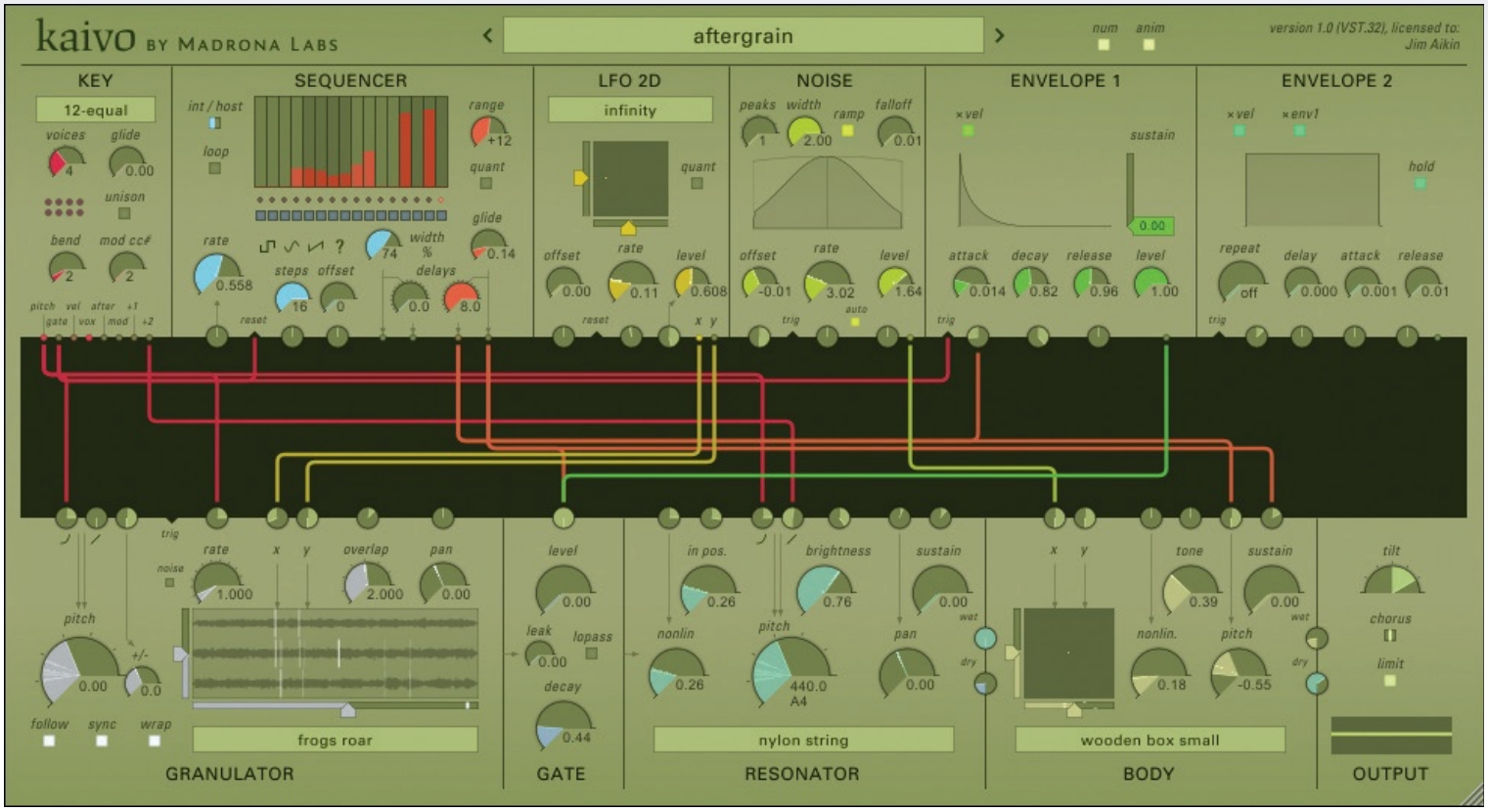

MADRONA LABS
Kaivo

BY JIM AIKIN

PLENTY OF SYNTHESIZERS STILL USE THE VOICE DESIGN LAID OUT BY THE Minimoog 40 years ago. You know the drill: a few oscillators, a filter or two, a couple of envelope generators, a couple of LFOs. But today's computers are fast enough that instrument designers are free to seek out new ideas and new sonic horizons, to boldly go . . . you know the rest. Kaivo is one of that new breed. It has two resonators, but no filter. It only has one oscillator, but some of the "waveforms" crossfade among four samples at once. It has a two-dimensional LFO and the most complex noise source you've ever seen. It has no modulation matrix, just a click-and-drag patch bay. The sounds it produces tend to be even stranger than that description would suggest. If you're craving stock leads, pads, and basses, look elsewhere. Kaivo's factory patch list sports names like "Shrapnel Flute," "Wandering Drum String," and "Arf!"

Snap Judgment

PROS Exotic sound design. Unusual modules. Highly patchable.

CONS No filters. Only one oscillator. CPU-intensive.

Overview

Kaivo meshes granular synthesis with physical modeling and modular sound design. Like Madrona Labs' first synth, the modeled analog Aalto, Kaivo is laid out with half a dozen modulation sources in the top section of the panel, and sound modules in the lower half. The sound modules are configured in a fixed left-to-right signal path.

The central area is the patch bay. Patch connections are made by dragging the mouse from one of the outlets of a module in the upper panel to one of the inlets in the lower panel. The upper modules also have inlets, so they can modulate one another. Small dials on the inlets are used to set the amount of modulation.

Multiple sources can be patched to one inlet, but they'll all share the same amount setting. The Granulator and Resonator each have two pitch inputs, however, one linear and one logarithmic, and several of the modulation sources have output level knobs, so there's a reasonable amount of control over modulation depth.

Synthesis

At the left end of the lower panel is the Granulator. This module produces tones using granular synthesis on one of more than 65 factory waveforms. (An update is planned that will allow user waves to be imported.) Some of the included selections are actually four separate waveforms; the granulator can be modulated in both the X and Y directions, Y modulation producing crossfades between one wave in the set and another. This may sound confusing, but the animation of the panel display makes it clear what's going on. You can program (or modulate) the amount of grain overlap, the rate of grain production, and several other things.

Next in line is a lowpass gate, which can function either as a VCA or as a lowpass filter. Note, however, that this filter is in line *before* the resonators, which are where a lot of the creative tone shaping comes in. As a result, Kaivo's sound will seldom have a snappy cutoff when you release your finger from the key: The resonators will usually continue to ring for a few moments, if not longer.

The first resonator, cleverly named "Resonator," has a choice of seven models, including strings, chimes, and springs. You can program and modulate the pitch, brightness, excitation position, panning, sustain amount, and nonlinearity. If the Granulator's pitch is tracking the keyboard while the Resonator's pitch isn't, you'll tend to hear quite strong resonant peaks depending on which note you play.

The panning control applies only to the wet output of the Resonator. Other than that, Kaivo has no user control over the stereo image.

The second resonator, called "Body," is monophonic: It processes the output of all of the voices together. Here you can choose one of two wooden boxes, a metal plate, or a frame drum. Because these are two-dimensional surfaces, you can set and modulate both the X and Y positions where the incoming signal will excite the model. Tone, pitch, sustain, and nonlinearity can also be modulated.

The output module, at the right end of the lower panel, is fairly simple. It has a chorus effect (implemented as an on/off switch), a Tilt dial, which tilts the signal toward the lower or higher part of the frequency spectrum, and a limiter (also an on/off switch). Since the resonators sometimes get a little too excited, having a limiter on-board is highly desirable.

I find that a good way to develop new sounds in Kaivo is to leave both resonators off, by turning their wet outputs down to zero. Start by finding a Granulator sound that you like, and then add resonators to taste. The results can be quite organic, or possibly suited to a horror movie soundtrack.

Modulators

Starting at the upper left corner, we have Kaivo's MIDI input module. This has outputs for gate (note on/off), pitch (note number plus pitch-bend), velocity, aftertouch, mod wheel, and two assignable MIDI control change messages. Pitch-bend depth, glide, the number of notes of polyphony, and micro-tuning scale can also be set.

The most interesting output from this module is called "vox." This transmits the number of the voice that is currently being activated. If you set Kaivo to three-note polyphony and play a three-note chord, for instance, the vox output will transmit a value of 1.0 for the first voice, 2.0 for the second voice, and 3.0 for the third voice. You can use this signal for whatever you like—for instance, giving each voice its own step sequencer speed. Each voice has its own sequencer, though all of them share the same panel settings.

The sequencer has 16 steps and graphic editing. It has two outputs each for gate on/off and the step value, and one of each type can be delayed by up to eight steps. It might seem odd at first to have two step-value outputs for a synth with only one oscillator, but by delaying the step being sent to the Resonator you can produce two independent pitch lines within a single voice. The output can be quantized to equal-tempered pitches, and its overall range can be set in half-steps. Both the number of steps and the offset (starting step) can be modulated in real time, as can the playback rate.

The LFO has X and Y outputs, which share the frequency and output level controls. Waveforms include circle, "knights," and "rain." We're running short of space here, so I'm going to let you download the demo version and find out for yourself what all that means.

The noise source has a frequency control that goes from 0.1Hz up to 10kHz. It can have up to eight narrow frequency peaks, and both the rate and level can be modulated. It can produce anything from subtle tone changes to insane mangling.

The two envelopes are a bit more normal. One is an ADSR type with a velocity on/off switch and modulation inputs for attack, decay, and release time. The other is a delay-attack-release type that can loop, making it an LFO.

Conclusions

I wouldn't mind seeing a few more modules added to Kaivo's arsenal. But while its feature set seems modest at first glance, there's a *lot* of creative sound power lurking in its guts. The CPU usage meters in my various DAWs showed intense activity when I added a Kaivo track to a piece, but a glance at the Task Manager in Windows 7 revealed that each instance of Kaivo was being run in a separate processor, so a quad-processor machine should be able to run up to four Kaivo instances without needing to do any track freezing. In sum, it's powerful, it's strange, and having a fast computer is a good idea. What else do you need to know? ♫

Bottom Line

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Left: *Hybrid Tools*.
Facing page: *Rhythmic Aura*.

8DIO

Rhythmic Aura and *Hybrid Tools*

BY JOHN KROGH

FOR THE PAST SEVERAL YEARS, PROLIFIC SOUNDWARE DEVELOPER 8DIO HAS been pumping out libraries that range from conventional orchestral titles to more sonically adventurous collections that push the boundaries of cinematic sound. In particular, their Hybrid Scoring Tools (HST) series has quickly gained favor among many media composers, thanks to the immediate usability of the instruments and creative mojo that can be conjured through the use of cleverly programmed performance controls. Even so, the territory 8Dio hopes to claim is becoming increasingly crowded. In a market with so many "cinematic" sample libraries and virtual instruments to choose from, do these Hybrid Scoring Tools bring something new to the party? Read on.

Overview

For this review I'll look at *Rhythmic Aura Vol. 1* and *Hybrid Tools Vol. 1*, the first two installments in the HST series, which currently comprises five separate titles. All of the collections are available in Native Instruments Kontakt format, with two of the Rhythmic titles also available in Stylus RMX format. (I'll focus on the Kontakt versions.)

Interestingly, *Aura* and *Hybrid Tools* don't employ Native Instruments' third-party developer license; rather, they're presented as open-format Kontakt libraries, which means they won't show up under Kontakt's Libraries tab. Instead, you'll need to navigate to the instrument files from Kontakt's Files menu. This was a bit of a surprise when I first installed the samples, but not a huge issue, except that it requires a slightly different workflow compared to working with many other sample products.

I should also point out that the HST instruments are download-only products. There's no need to worry about long download times, howev-

Snap Judgment

PROS Much of the material in *Rhythmic Aura* is four bars long. Performance controls allow for easy improvisation with effects. Expert sound design and inspiring sample content.

CONS Loop/rhythmic samples not provided in "sliced" format. Time-limited use in free Kontakt Player.

er, since Aura weighs in at roughly 1GB and Hybrid at just under 1.5GB—relatively small footprints compared to some of the mondo-sized libraries on the market. While it is possible to access Aura and Hybrid from NI's free Kontakt Player, this will only provide time-limited usage of the sounds, so to get the most from these instruments you really need the full version of Kontakt.

Both instruments have a similar two-page user interface that looks a lot like a dedicated soft synth. The Main page offers several tone shaping controls, including a three-band EQ with selectable mid frequency, as well as cutoff frequency and resonance for the lowpass filter (this isn't user selectable from the UI, although you can edit the instrument's filter type if you're using the full version of Kontakt). You'll also find attack and release controls, along with speed and amount settings for the audio gate, which can be applied to create cool rhythmic effects. Speaking of, both instruments feature a set of built-in effects (*Aura* has seven, *Hybrid* has eight with the addition of flanger), which you can tweak from the Effects page.

What's more, the effects can be momentarily engaged by pressing specific keys at the top of the keyboard. This lets you "play" the effects in real time (though you can't trigger the gate from the keyboard, which some competing products offer). It gets more interesting when you add the modulation wheel, which is mapped to filter cutoff, and the pitch wheel, which is mapped to lo-fi amount. Putting all of these performance controls together, you're able to improvise with the sounds and create evolving passages without having to overdub a bunch of continuous controller moves. Nice.

Rhythmic Aura

According to the documentation, *Aura* is created entirely from acoustic source material that has been further manipulated to produce 540 "organic arpeggiations." It's not all truly acoustic material, as there are electric and acoustic-electric guitars in the mix, but the point is that the samples came from live performances of real instruments. The rhythmic patterns ("auras" in 8Dio-speak) are organized into presets by instrument type (*e.g.*, Alternative Strings, Banjo Bass, Tuned Percussion, etc.), which I found to be intuitive and useful for easy auditioning.

Musically, the samples range from simple tonal pulses and repetitive phrases of single notes and harmonies, to full chord progressions. Most of the material has vaguely minor or "sus" qualities that would work well for evoking a variety of moods, from brooding and pensive to frantic and fearful. While everything is presented at the base pitch of *D*, you can easily transpose on the fly using keyswitches at the lower end of the keyboard.

My only criticism is that the loops aren't presented in a "sliced" format with individual rhythmic components mapped along the keyboard similar to a REX file. If you want to create new material by rearranging individual hits within a rhythmic pattern, I recommend purchasing the Stylus RMX version.

Sonically, these are some of the most ear-catching and musically inspiring sounds I've had the pleasure to play. As I was auditioning instruments during the course of the review, I kept getting distracted with new compositional ideas that would start to take shape as I layered and combined different samples. I especially appreciate that nearly all of the rhythmic performances are four-bar phrases, so they don't get boring the way that one- and two-bar loops often can. Many other similar products suffer from short loops—kudos to 8Dio for giving us the musical goods.

Hybrid Tools

As its name suggests, *Hybrid Tools* gives composers and producers over 900 "musical sound design" samples organized into 38 instrument presets, each of which represents a sound category. The idea is that each instrument provides a certain set of "tools" that you can add to your tracks.

Categories include Boomers (low impacts, low frequency swells, etc.), Downers (similar to boomers, but with downward pitch shifting characteristics), Impacts, Rhythms, Synths, and more. Many of the categories offer "clean" versions, referring to less distorted sounds that are meant to be "very friendly to all styles from epic hybrid orchestration to electronica and pop," and "gritty" versions, which are more distorted and processed, making them suitable for heavier and darker styles. The samples are also provided in 24-bit/44.1kHz WAV format complete with metadata that can be read by Soundminer, a popular audio search engine and management program used by many in the audio post-production field. Format flexibility? Check.

Hybrid is brimming with the kind of high-production, up-to-the-second sound effects and ear candy that one might use to take a track from solid to stellar. Most of the presets consist of distinct samples mapped to individual keys, which makes it easy to choose a general vibe, such as "whooshes," and then play around on the keys until you find a sample that fits best in your composition.

There are also some very nice multisampled synths that would sound equally at home in soundtrack work as well as certain electronic and pop styles. I found plenty of great drones and basses that will be making their appearance in future cues.

8Dio went the extra mile by including 67 impulse responses (IRs), which can be loaded into Kontakt's convolution reverb. These IRs (many of which are also included with Aura) cover the gamut from custom-sampled rooms and halls to the more exotic, allowing you to create new textures and sonic landscapes.

Conclusions

Rhythmic Aura and *Hybrid Tools* are top-notch collections that carve out their own niche and take the notion of "musical sound design" to new heights. The amount of creative flexibility and production-ready quality that Hybrid Scoring Tools affords is hard to beat, and especially for media composers who produce music to deadlines, these tools are invaluable. ♫

Bottom Line

Some of the best sounds for modern music-to-picture on the market.

Rhythmic Aura Vol. 1: $249 download | Hybrid Tools Vol. 1: $249 download
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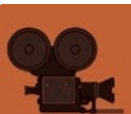

Video walk-through of 8Dio library features.

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EASTWEST

Steven Wilson Ghostwriter

BY ROB SHROCK

GHOSTWRITER IS THE BRAINCHILD OF AWARD-WINNING COMPOSER, MUSICIAN, and sound design expert Steven Wilson (prog solo artist and also frontman of Porcupine Tree) and Doug Rogers of EastWest. Ghostwriter utilizes EastWest's new Play 4 engine, which now features a new amp simulator and Echoplex EP-1 delay designed specifically for this library. Going by the name and product description, I initially thought Ghostwriter was going to be a collection of sampled phrases, like many libraries that use the "construction kit" approach to build up soundtracks. That's not the case. With over 60GB of guitars, basses, drums, keyboards, vocals, and a few random odds and ends, Ghostwriter is intended to inspire composition through a collection of dark, moody sounds focusing clearly on rock instrumentation. This is accomplished through the masterful use of instrument choice and effects to create an eerie and sometimes disturbing sonic landscape.

Snap Judgment

PROS Inspiring sounds geared towards TV, film, and game soundtracks with a dark edge. Great collection of guitars and basses with a musical set of articulations. Excellent use of effects for unsettling ambiances and textures. Improved Play 4 engine adds new guitar amp simulator and Echoplex EP-1 delay. Tons of personality.

CONS Specific focus of instrumentation and mood make it a set of very interesting colors rather than a full palette. Drum kit sounds are limited.

Instruments

Ghostwriter's instruments are divided into six folders of Guitar, Bass, Keys, Drums, Vocals, and Miscellaneous. The library is very well organized, and most of the individual instruments have very detailed names that let you clearly know what you're selecting, like "Baritone Marshall Dirty Pwr-Chords" in the Baritone Les Paul folder under Guitars. With so much great content to wade through and learn, this makes it simple and efficient to navigate the library and is greatly appreciated.

By far, the greatest attention is given to the guitars, and it will take some time to explore all the various articulations and sonic creations. The guitars are provided in a myriad of ways, like direct, dirty, heavy, spacey, modulated, driven, re-amped, and so on. Each sound is tastefully created specifically for the instrument at hand, and practically everything is useful in one way or another.

Once you find an instrument and sonic approach you like, you're typically given a number of performance articulations, like sustained (with and without vibrato), staccato, muted, muted staccato, round-robin, and so on. There's a Master patch for each flavor that contains all the articulations in a key-switched version; however, these patches obviously have much larger memory requirements and are slower to load.

There are only three basses included, but they all sound amazing and cover a lot of bottom end territory. The "Tunnel" and "Obliterator" basses are given just a few variations, like normal, fuzz, swell, and filtered. The "Spector" bass is a more developed collection with DI, amp, grunge, edgy, fuzz, re-amped, and reverberant sub-folders. Fingered, picked, sustains, muted, slides and expressive vibrato give you a lot of choices for building some very musical bass parts. Tweaking or adding additional processing from the effects built into the Play engine (EastWest's own sample playback platform, baked into their virtual instruments) gives you a wide berth of bass possibilities from thunderous to unsettling to downright nasty.

The keyboards and vocals are a lot lighter in the choices. Vocals are mostly male or female oohs and ahs, but they've been given some amped, filtered, and ambient variations. Keyboards and mallets are a cool collection of tripped-out Clavinet, pianos, Mellotron strings, celesta, glockenspiel, vibes, Farfisa, and a few other things. They've all been processed pretty heavily and made into something cool and eerie that would fit right into an episode of *American Horror Story*. Bizarre keyboard-based textures are easily found in other libraries and synths, so I understand why Ghostwriter focuses mostly on the elaborate textures achieved with guitars and basses: It's harder to do this well, and that's the point.

The drum folder is built primarily around two kits, with an alternate snare provided for some patches. You get the kit dry, with gated reverb, run through various mono amps (via the simulator), and with various effects. "Snare 1" usually gives you the options of snares on, snares on and wet, and snares off. "Snare 2" is just an alternate drum with snares on.

I did wish there was more content in the drum department. I understand Ghostwriter isn't intended to be a full drum library; and there are many other great rock drum libraries to be had, including EastWest's own *Ministry of Rock* 1 and 2. But I would have liked more articulations, better cymbals, and a few more kit variations to feel like I had it all covered inside Ghostwriter. The effects and mangled sonic variations provided are really good and creative; however, I'd like to be able to swap out a kick or set of toms, considering you can't individually tweak the envelope or tuning of individual kit elements. I felt everything ultimately had a "sameness" to it that lent itself to simple patterns rather than detailed drum performances that sound real, in spite of the imaginative variations of the effects. Perhaps that was just my experience with it, but I'm looking at it from the perspective of what personally inspires me.

The miscellaneous sounds round out the collection. Across the board, it's evident that a lot of time and effort went into creating these sounds, all with an ear towards coming up with cool things appropriate for the type of instrument in hand. This is where the experience and recording skills of Wilson and Rogers really shine through, as pretty much everything here is useful in some way for this type of genre work.

Amp Models and Effects

In general, generous use of effects is employed to create all these great textures. Some effects are integrated into the samples (like a Leslie) and at other times the effects are added within the Play 4 engine, including the new amp simulator and EP-1 delay.

The amp simulator comes with 80 presets that sound killer. If it were a standalone plug-in, I'd use it. Common amps like Fender, Marshall, Mesa Boogie, Soldano, and Vox are well represented, as are less common amps by Engl, Divided by Thirteen, ToneKing, and Cameron heads. Most models give you different mic choices built into the preset name, like "Aguilar Bass Rig AKG D-112" or "Roland 421." It's not an exhaustive collection of mic choices, and you can't blend two mic or amp combinations; it's simply a large collection of presets. Other than the Vox AC-30, it's not visually obvious what model of amp you're using. However, they largely sound really good as a way to further mangle the sounds, and each amp model allows you to tweak the drive, bass, mid, treble, and master volume.

The new EP-1 Delay allows you to set the delay time either in milliseconds or sync to your host with a specific beat relation (like a quarter-note). Controls for flutter, drive, echo time, repeats and level are provided. There are no controls for creating panning delays or the sort; again, it's not designed for that. The delay remains in stereo for stereo patches, and it really adds more depth and flexibility to the sounds, overall. Alongside the built-in convolution reverb and SSL modules in Play 4, there's a lot of sound design power in the hands of the user.

Conclusions

Once I understood the approach to Ghostwriter, I was able to realize its full potential as a collection of inspiring sounds. For me, simply going through the sounds would inspire a riff or motif that I could build on quickly.

Creating authentic modern, interesting cinematic textures in this genre is hard work, as it takes a real knowledge of tone and effects to sound masterful. Given Wilson's experience and credits, I felt there was a lot of skill and integrity sitting next to me as I begin exploring the various textures. When you need dark and otherworldly, Ghostwriter is a beautifully sinister collection of sonic colors. ♫

Bottom Line

Eerie and otherworldly, Ghostwriter marries modern cinematic and progressive rock tones into an unholy union that is ghoulishly great fun.

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Original audio examples.

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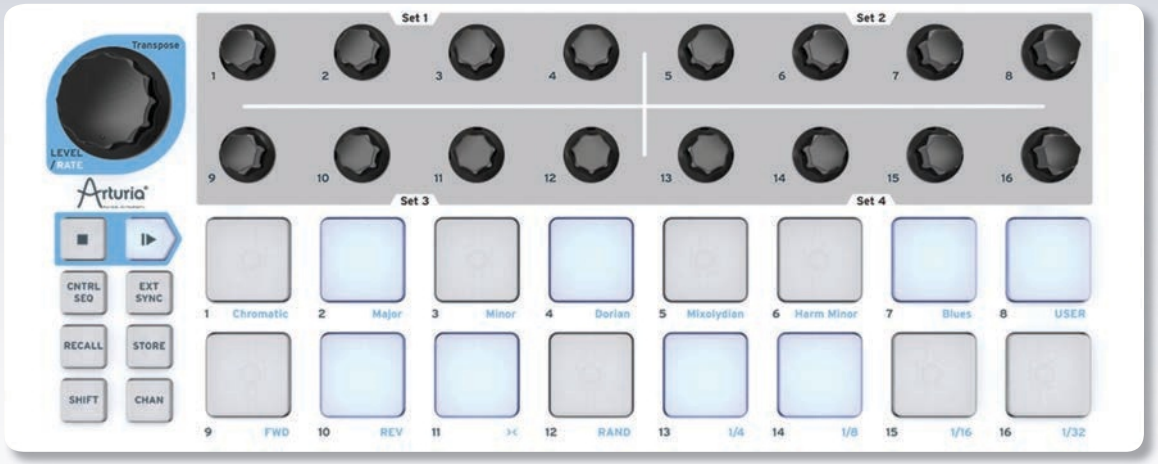

Keyboard K KEYBUY AWARD

ARTURIA BeatStep

BY FRANCIS PRÈVE

FOR A COMPANY THAT MADE ITS NAME CREATING TOP-NOTCH SOFT SYNTHS, Arturia's relatively recent plunge into analog waters is quickly becoming a deep-sea dive. Case in point, their new BeatStep control surface. On the surface, the BeatStep looks like a slimline drum pad controller that bears a passing resemblance to the Korg NanoPad, but swim a little further and you'll discover that it's also a fantastic addition to a modern analog rig, thanks to its gate and CV outputs.

The BeatStep's small form factor and sturdy construction makes it a shoo-in for laptop performers. With space at a premium in a typical gig bag, the BeatStep's combination of price and functionality (topped off with tons of multi-colored LEDs) will be fairly irresistible for DJs of all shapes and sizes.

As a pad controller, BeatStep's MIDI features are remarkably robust, thanks in a large part to its companion software that delivers a high degree of customization in a clean, intuitive interface. In addition to the expected MIDI controller mapping options, users can easily edit performance details like whether the knobs respond in absolute or relative modes, how quickly they respond to fast or slow knob twists (think of it as rotational velocity), and the velocity response of the pads (including exponential, linear, logarithmic, and maximum velocity). Each of these configurations can be saved as a preset. This is a lovely touch, as bangin' tracks often result in overly enthusiastic playing, while chill tracks tend to require a bit less performance bombast.

Between these controller features and the overall construction, the BeatStep is already a solid value, but Arturia also included a remarkably capable step sequencer that works for both MIDI and analog CV/gate applications. As a producer with a fair amount of analog gear, this really got my juices flowing.

You can edit the sequences either directly from the knobs or via the software editor, so live performance tweaks are part and parcel of the BeatStep experience. What's more, you can save specific key and scale information as part of any of its 16 presets, so flubbed notes are only an option if you're feeling bold.

The sequencer's clock is strictly USB, so you can't sync the BeatStep *from* other analog gear, but for 99 percent of users this won't be a problem. On the other hand, the swing parameter can only be edited from the software, which is a bit of a drag after becoming addicted to the Roland Aira TR-8's continuously variable swing in a performance context.

While the step sequencer can be used traditionally for musical material, in conjunction with synths like Arturia's own MiniBrute and MicroBrute or my trusty Roland SH-101, I had even more fun using it to modulate parameters on my Tom Oberheim and Doepfer analog gear. Being able to sync the tempo to my DAW via USB, then use the CV out to modulate the filters in my rig while tweaking the sequences in real time felt a lot like magic in the context of a studio session. Things got even more interesting when I applied the BeatStep's nifty pattern direction functions, which include forward, backward, back-and-forth, and random.

All in all, the BeatStep Is another awesome product from Arturia—a company that's *clearly* on a roll when it comes to delivering what the modern market wants, at a price that real musicians can actually afford. That's why we're awarding it a Key Buy.

Snap Judgment

PROS Sixteen pads with customizable velocity curves plus 16 endless knobs. CV and Gate outputs. Software editor offers extensive customization and sequence editing.

CONS Sequencer clock is strictly USB. Non-realtime swing parameter can only be edited via software.

Bottom Line

Affordable Swiss Army Knife sequencer and controller for both analog and digital rigs.

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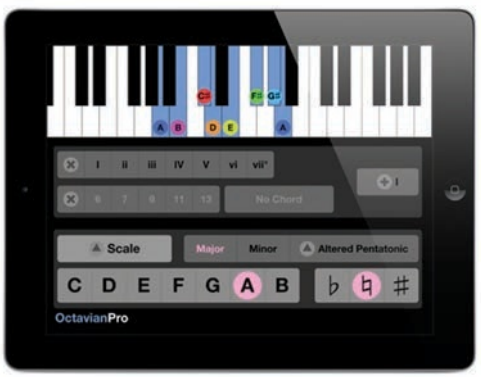

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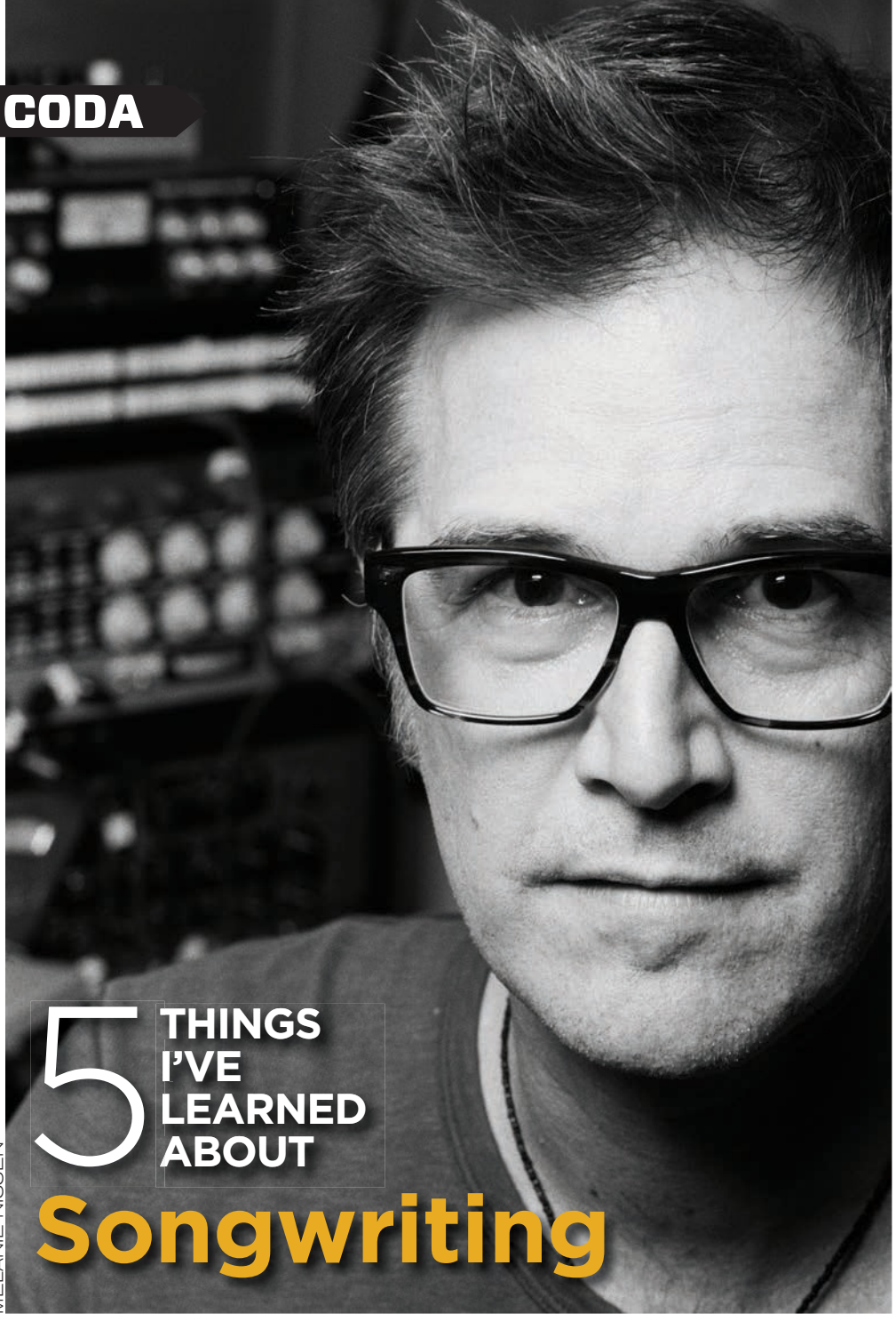
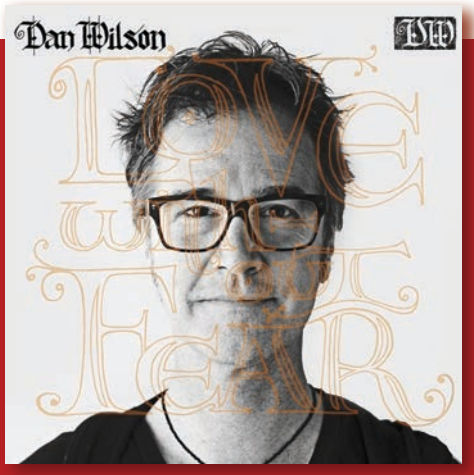


MELANIE NISSEN

5 THINGS I'VE LEARNED ABOUT Songwriting

BY DAN WILSON



Acclaimed singer and songwriter **Dan Wilson** has been a frequent presence atop the pop charts since his 1998 song with Semisonic "Closing Time" rocketed to number one. Wilson has written songs with artists including Adele, Pink, Nas, Taylor Swift, John Legend and others. His new solo album, *Love Without Fear,* is out now. Find out more at danwilsonmusic.com.

WHEN I WAS A VERY LITTLE KID MY PARENTS TOOK ME TO SWIM LESSONS. On my first day, standing at the end of the diving board, waiting to jump in, I froze with fear. I couldn't climb down. I couldn't jump. What happened next was terrible but also helpful. My big, blonde, Norwegian-American swim teacher strode up onto the diving board, wrapped me in her arms, and jumped into the pool with me. My eyes were open as we went under, and I can still remember rising through the blue and popping up to the surface with her. I was fine! There was nothing to be afraid of. I enjoyed the water ever after.

So many musicians I know spend their careers standing at the top of the diving board, waiting to jump in. I wish I could wrap them all up in my arms and jump in with them. Songwriters, here are some good ways to get yourself into the pool.

1. Work on Your Music Every Day, Inspired or Not

Once during my time as an art student, I complained to my instructor, Tina Stack, that I wasn't inspired to work that day, so I was going to knock off early. She said something that surprised me and that has helped me ever since: "You're better off staying and working, whether you're inspired or not. The muse doesn't always visit. But when she does, you need to be in your studio, working. If the muse visits your studio when you're at the bar, she can't do you any good." There was something so liberating about the idea that I didn't need to be inspired every minute of the day to be a real artist—that I could get meaningful work done whether I felt inspired or not. And even though I wasn't inspired at that moment, inspiration would eventually come. This turned out to be completely true. Over time, I have learned that most great painters paint every day, most novelists write every day, and most great musicians make music every day, whether or not they're "feeling it."

2. Have an Artistic Practice

Prince has a great song called "There Is Joy in Repetition." Is there something about your artistic practice that you can do every day? At the same time every day, even? It's challenging to

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STEVEN COHEN

There was something so liberating about the idea that I didn't need to be inspired every minute of the day to be a real artist—that I could get meaningful work done whether I felt inspired or not.

arrange your life so that you can have an artistic practice, but it's not impossible, and it's worth the effort. Every weekday morning, after getting the kids off to school, I try to play the piano for half an hour. I play Broadway standards and jazz hits from the middle of the last century: Duke Ellington, Harold Arlen, Richard Rodgers, Cole Porter, Wayne Shorter, Charles Mingus, and Leonard Bernstein. It's a joy for me, partly because I like the sense of a simple routine, partly because reading music is an interesting challenge, and partly because I know I'm loading up my imagination with great melodies. After I'm done with the greats, I start working on my own music. The excitement of Ellington carries me through, even when my own song might not be quite figured out.

Experimenting with new artistic practices can be a fun game in itself. Among the most fruitful songwriting times I've ever had were two stretches when I wrote a song a day, every day, for a month. The first time I did it was when I was writing material for Semisonic's *Feeling Strangely Fine* album. I got the song-a-day idea from a fellow songwriter, and it seemed interesting. The rules were that you had to finish the song, from beginning to end, every note of melody and every word of lyrics, by the end of that day. Importantly, it didn't have to be good; it just had to be done. Then the next day, you would start a new one. For the first two weeks, it felt weird and artificial. The stuff I was writing all seemed a little forced. I nearly gave up the experiment. But then suddenly I turned a corner, and writing a song became really easy. I found myself continuously transforming small moments from everyday life into metaphors, stealing remarks my friends made and turning them into titles. I ended up writing a lot of the album during that time. And I rode that creative wave during the weeks to follow, even after the song-a-day experiment was over. I owe "Closing Time," among other songs, to the artistic momentum I got from that crazy month.

3. Let Your Audience Teach You

The best thing you can do to improve your songs is to play them for people, even if you don't feel like they are "finished" or "good enough" or "original enough." Don't wait for some magical "readiness" to descend upon you. You are ready *now*. Open mic. Church talent show. A party or gathering with friends. When you play your song for people, you get the amazing feedback effect of an audience. It's like a magical kind of critique that needs no words. You will learn from the audience's reaction which songs are good and which need work. You will learn which of your "tricks" are worth using over and over (of course you'll use the same tricks over and over—we all do) and which "trick" isn't really a trick at all. And you'll start to get yourself hooked on playing your songs for people, which is the biggest trick of all.

Another great hidden benefit of getting in front of audiences is that you're way more likely to meet other musicians that way. Musicians are always the first group of people to discover a new songwriter or player. So you might find that during your first year of shows, most of the people who show up are other musicians. This is a good thing, because not only are other musicians good cheerleaders for great music, but they're also going to be crucial to your own musical efforts. When I'm at an impasse in the studio, when I can't figure out a great next verse for a song, when I want to make a gig more interesting and entertaining, I find the most effective trick is getting another musician involved.

4. Hang Out With Musicians, Be a Friend, and Help Somebody

This is a *life* you're trying to create here, an artist's life. It's not a windfall, or a payday, or a brand. Your biggest and most complex creative project is the creation of an artist's life. And one thing that makes an artist's life worth living is the wonderful company of other artists. Musicians are the funniest, silliest, most generous, spontaneous, and overly dramatic tribe of people in the world. By being a musician, you already have earned the amazing right to hang out and have a beer with them, to help them move house, to date them, and to bail them out when they're in trouble. Don't forget about these things, because they're almost the best part. A teacher of mine, Ron Jones, says: "Work a lot, yes; work six days and nights a week, but save one day or night to hang out with musicians."

5. Working on Music You Love Is a Long-Term Investment. Working on Music You Hate is a Short-Term Hedge. Go for the Long Haul.

Artist Tom Sachs says, "The only reward for work, is more work." It's hard to overemphasize how true this is. Nobody in this gig wants to retire at age 35; I don't care what you say. If you're a real musician, you'll be stuck with this inconvenient obsession for the rest of your life. Which means most of your time will be spent working, and very little time will be left for relaxing on the yacht that you buy with your royalties. If you succeed, the world will flood you with requests for more of whatever music has brought you the most success. So if you're doing music you love, in a style and a direction that you love, your reward will eventually be this: the chance to do *more* music that you love. If you're doing music that you despise, just for the money, your reward will be to do more of the same music you despise. I have friends who study the Top 10 and try to cop the sounds and styles of the Top 10. These friends don't even enjoy the sounds and styles of the Top 10; they just think that by studying this music, they'll find their own paths to success. What a nightmare! I say, study greatness! What music do you love most deeply? What really moves you? Study that with great passion, and try to follow that music. Then one day the world will be asking you to make more of what you love.

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